

# CHAPTER ONE

## INTRODUCTION

### **1.1 Background of the Study**

According to the U.S. Department of Education, Office of Special Education Programs, Data Analysis System (2001), in 1999 – 2000 the drop-out rate of learners with visual impairment was 11.9%. It is estimated that the prevalence of learners with visual impairment is 10 times higher in Africa than in the industrialized countries (Rukwaro 2010). According to Suka (2006), In Malawi, the Basic Education Statistics 2005, reported girls simply stop going to school because of the unsafe learning environment and this is interpreted as ‘a lack of interest’. According to Steve, Larry, Mani, Cathrine, Ben, & Wilfred (2005), in Uganda, learners who do not attend school or who drop-out are most likely to be learners with visual impairment in integrated programs. MOEST (2008) reported that the main challenges relating to access and equity in the provision of education and training to learners with special educational needs include the current examination system which is also limiting, rigid and denies the majority of learners with special educational needs opportunities for higher education

According to Educational Assessment and Resource Centre (EARC) (2012), out of the 524 Learners with Low Vision (LWLV) enrolled in regular primary schools in Vihiga County between 2008 and 2011, 158 (30.2%) dropped out of schools within the same period. (See table 1.1) The report further indicates that although most of the teachers handling LWLV were reported to provide educational needs for the learners, very few had the capacity to do so. There were no relevant professionals in schools apart from Special Needs Education (SNE) officers. Most of the teachers for LWLV had no information about low vision and LWLV (EARC, 2012).

**Table 1.1: Enrolment, Retention and Drop-out Rate of LWLV in Regular Primary Schools in Vihiga County Between 2008 – 2011.**

	No. of LWLV 2008	No. of LWLV 2009	No. of LWLV 2010	No. of LWLV 2011	Total
Enrolment	130	129	133	132	<b>524</b>
Drop-out	43 (33.1%)	36 (27.9%)	39 (29.3%)	40 (30.3%)	<b>158 (30.2%)</b>
Retention	87 (66.9%)	93 (72.9%)	94 (70.7%)	92 (69.7%)	<b>366 (69.8%)</b>

**Source: EARC (2012), Annual Report, Vihiga County, Kenya.**

**Key: No. of LWLV – Number of Learners with Low Vision**

According to EARC (2012), 4475 (10.3%) sighted learners dropped out of regular primary schools in Vihiga County between 2008 and 2011. (See table 1.2)

**Table 1.2: Enrolment, Retention and Drop-out Rate of Sighted Learners in Regular Primary Schools in Vihiga County Between 2008 – 2011.**

	No. of LWLV 2008	No. of LWLV 2009	No. of LWLV 2010	No. of LWLV 2011	Total
Enrolment	11104	11007	10783	10465	43359
Drop-out	969 (9.7%)	1097 (10.0%)	1405 (13.0)	1004 (9.6%)	4475 (10.3%)
Retention	10135 (91.3%)	9910 (90.0%)	9378 (87.0%)	9461 (90.4%)	38884 (89.7%)

**Source: EARC (2012), Annual Report, Vihiga County, Kenya.**

There is a big disparity between the drop-out rate of LWLV and sighted learners in regular primary schools in Vihiga County. The drop-out rate of LWLV 158 (30.2%) is relatively higher compared to that of sighted learners 4,475 (10.3%). The reason for the high drop-out rate of LWLV in regular primary schools in Vihiga County was not yet known. This study therefore sought to establish teachers' perspectives on the reason for the drop-out of LWLV in regular primary schools in Vihiga County, Kenya.

According to Kirk, Gallagher, Anastasiow & Coleman (2006), the core curriculum demands that learners with visual impairment should master the standard curriculum embedded in such subjects as language arts, mathematics, social studies and physical education. The Expanded Core Curriculum (ECC) includes areas of instruction specific to students with visual impairment. Intervention from a teacher for students with visual impairment is necessary to provide direct instruction in the ECC. According to UNESCO (2005), teachers must allow learners who struggle extra time in their exams and tests and allow them to use aids such as calculators and dictionaries.

Zimba, Mowes & Naanda (2006) argued that the Namibian Curriculum is geared towards the majority of learners who are in mainstream schools to ensure maximum retention of such learners. The Final Report of the National Policy on Inclusive Education (Väyrynen, 2008) also pointed that the Basic Education Broad Curriculum does not adequately address the diverse needs of all learners leading to high drop-out cases. In her opening speech at a conference on inclusive education in June 2009, Ndjozo-Ozo stated that currently Namibia is in the beginning process of developing a "special curriculum" to curb drop-out cases of learners with disabilities from inclusive schools. Earlier in the year 2009 she had also stated that the National Institute for Educational Development (NIED) had been charged with

curriculum development. NIED had since appointed an inclusive education officer in order to make sure that the curriculum development is geared towards inclusive education and that support materials for teachers and learners are developed to ensure maximum retention of learners with disabilities in schools (New Era, 2009).

According to MOEST (2003), with the introduction of Free Primary Education (FPE), many learners with special educational needs joined both special and regular schools but immediately dropped out due to lack of support in terms of assistive/functional devices, learning resources, mandatory medication and adapted curriculum. A significant number of learners with visual impairment face barriers in accessing quality education. A resource distribution analysis undertaken by the Kenya Integrated Education programme (KIEP) indicated a gross under supply of the requisite resources for the education of learners with visual impairment, for instance due to frequent change of curriculum and teaching/learning materials (KSB, 2011). MOEST (2003) observed that Kenya Institute of Education (KIE) has developed and adapted the curriculum mainly for learners with visual impairment to ensure that they are accommodated in schools. Although the curriculum had been developed and measures put down to ensure it is adapted to meet the educational needs of LWLV in Kenya, literature depicts lack of implementation of the adapted curriculum in Kenya. While this is clear, no research had been carried out to establish the relationship between curriculum adaptation and drop-out of LWLV in regular primary schools in Vihiga County. This study therefore sought to determine teachers' perspectives on influence of curriculum adaptation on drop-out of LWLV in regular primary schools in Vihiga County.

Environment need to be modified to embrace accessibility, participation and retention of learners with disabilities (UN, 1990; UNESCO, 1994; UNICEF, 2003; UNESCO, 2005; UN,

2000). The environmental adaptations for learners with visual impairment include lighting; colour contrast; distance and time (Kirk, et al. 2006; Gargiulo 2006). According to Kirk (2006), the Americans with Disabilities Act direct schools to remove barriers related to physical environment to ensure that learners with disabilities continue to interact with the environment well. In Namibia, environmental adaptations present challenges due to the large numbers of learners, placing a limit on the space available (Tanya, 2010). According to a survey carried out by KESSP in 2005, 75% of head teachers in Kenya identified an unfriendly environment as a major cause for their refusal to admit and promote LWLV in their schools (KSB, 2011). While it had been pointed out that the physical environment in regular primary schools in Kenya was unfriendly for LWLV, no research had been carried out to find out if the unfriendly physical environment can cause drop-out of LWLV. This study therefore sought to find out teachers' perspectives on influence of physical environment on drop-out of LWLV in regular primary schools.

## **1.2 Statement of the Problem**

The Government of Kenya in collaboration with Non-Governmental Organizations play a vital role in ensuring learning environment accommodates learners with disabilities in Kenya yet 158 (30.2%) LWLV dropped out of regular primary schools in Vihiga County between 2008 and 2011. Although the drop-out rate of LWLV was relatively higher compared to that of sighted learners 4,475 (10.3%), the reason for the higher drop-out rate of LWLV was not yet known. Literature shows that the curriculum and physical environment were yet to be adapted to cater for the educational needs of LWLV in regular primary schools in Kenya. On the contrary, no research had been carried out to establish if lack of adapted curriculum or physical environment was the cause of drop-out of LWLV in regular primary schools in Vihiga County. This study therefore sought to determine teachers' perspectives on the

influence of curriculum and physical environment on drop-out of LWLV in regular primary schools in Vihiga County.

### **1.3 Purpose of the Study**

The purpose of this study was to establish teachers' perspectives on influence of learning environment on drop-out of LWLV in regular primary schools in Vihiga County, Kenya.

### **1.4 Objectives of the Study**

Objectives of the study were to;

- i. Establish teachers' perspectives on reasons for the drop-out of learners with low vision in regular primary schools;
- ii. Determine teachers' perspectives on influence of curriculum adaptations on drop-out of learners with low vision in regular primary schools; and
- iii. Find out teachers' perspectives on influence of adaptations made on physical environment on drop-out of learners with low vision in regular primary schools.

### **Research Questions**

The study was guided by the following research questions:

- i. What are teachers' perspectives on why learners with low vision drop-out of regular primary schools?
- ii. What are teachers' perspectives on influence of curriculum on drop-out of learners with low vision in regular primary schools; and,
- iii. What are teachers' perspectives on influence of physical environment have on drop-out of learners with low vision in regular primary schools;

### **1.5 Scope of the Study**

The LWLV in this study were in their respective schools by virtue of placement option done by the EARC in Vihiga County. Only schools having LWLV as determined by the EARC in Vihiga County participated in this study. This study sought to establish teachers' perspectives on: drop-out of LWLV and influence of curriculum and physical environment on drop-out of LWLV in regular primary schools in Vihiga County, Kenya.

### **1.6 Assumptions of the Study**

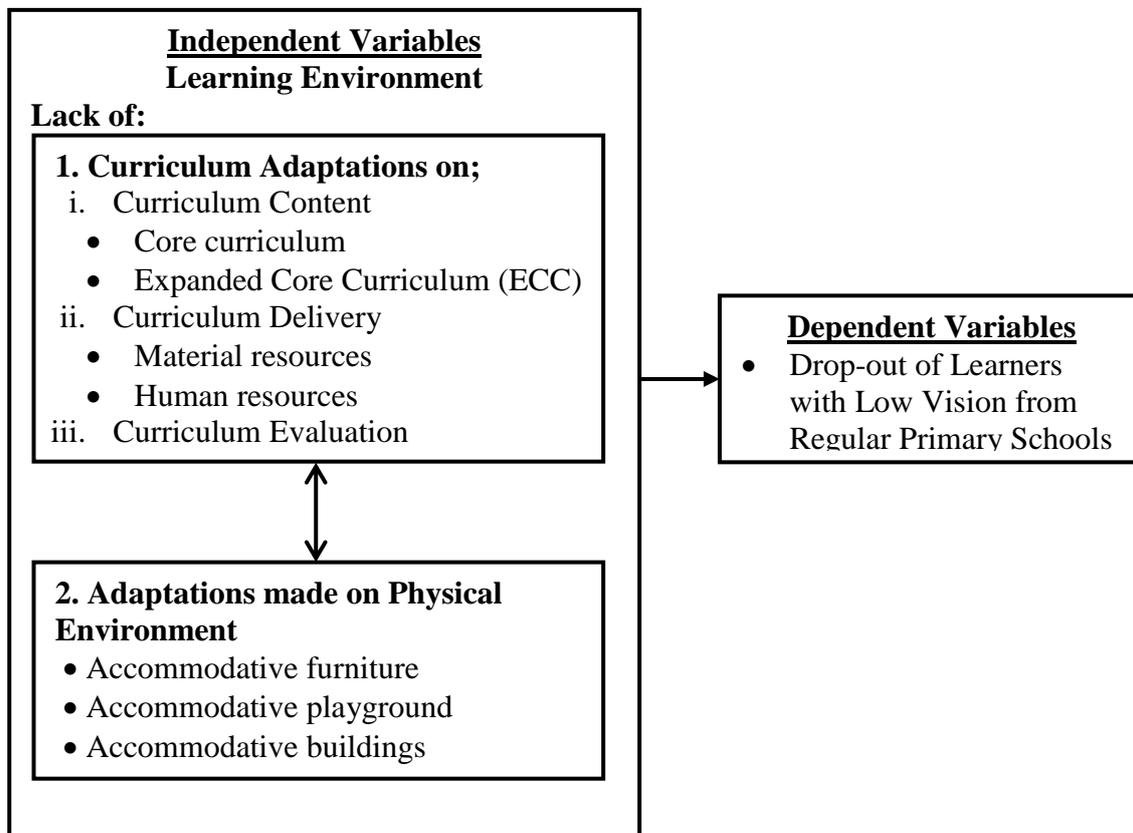
- i. There were learners with low vision in the sampled schools.
- ii. Pupils who dropped-out from school were traceable.
- iii. Teachers in the sampled schools were conversant with the required learning environment for learners with low vision.

### **1.7 Significance of the Study**

Findings of this study will guide the Ministry of Education in the provision of human, financial, physical and material resources to LWLV in regular primary schools. The findings will also provide a base for curriculum: developers, implementers and evaluators to adapt the curriculum and physical environment for LWLV to ensure that LWLV access quality and relevant education in a least restrictive environment. Teachers will use the findings of this research in modifying their teaching strategies and approaches when attending to LWLV. EARC Officers will use the findings of this research in improving on assessment and intervention procedures for LWLV: Quality Assurance Officers will also use the findings of this study in ensuring that education standards are up to date while examiners may use it in modifying examinations to meet the educational needs of LWLV.

## 1.8 Conceptual Framework

The study was guided by the following conceptual framework;



**Fig.1.1** Conceptual Framework showing the Relationship between Learning Environment and Drop-out of LWLV in Regular Primary Schools.

Source: Researcher.

In the Framework, independent variable in the study was learning environment (adaptations made on curriculum and physical environment) while the dependent variable was drop-out of LWLV from regular primary schools. Curriculum adaptations include adaptations made on: curriculum content – core curriculum and Expanded Core Curriculum; curriculum delivery – material resource and human resource; and curriculum evaluation. Adaptations made on the physical environment include: accommodative furniture, accommodative playgrounds and accommodative buildings. Lack of adaptations on curriculum and/or physical environment influences the drop-out of LWLV in regular primary schools. As adaptation on curriculum and/or physical environment increases in value, the drop-out rate of LWLV decreases in

value and as adaptation on curriculum and/or physical environment decreases in value, the drop-out rate of LWLV increases in value. Drop-out rate of LWLV is determined by the extent to which the learning environment has been adapted to accommodate the special educational needs of LWLV. Learning environments affect each other either directly or indirectly leading to an increase or decrease in the drop-out rate of LWLV.

## **1.9 Definition of Operational Terms**

### **Learning disorder (LD)**

A generic term that refers to a heterogeneous group of disorders that are manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and are presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions, it is not the real result of those conditions or influences.

## **CHAPTER TWO**

## **LITERATURE REVIEW**

### **2.1 Teachers' Perspectives on Drop-out of Learners with Low Vision**

Elizabeth (2012), observed that according to the United States Department of Education, during the 1998-1999 school year, the drop-out rate of students with special needs was 28 percent. That rate was approximately twice that of regular education students. While the number seems alarming, there are several contributing factors. These include: Students with disabilities have low academic skills. Sometimes they feel that they just can't cope up with all the academic demands. This factor alone causes many students to stress out and drop out as a result. Another reason for the drop out is because they lack motivation. For one reason or another, such as family culture or poverty, many students are just not motivated to do well. This can lead to failing grades and eventually may also lead to dropping out. Students who struggle academically and fail classes often end up being retained. Repeating of classes is another reason why students with disabilities drop out of school. They feel discouraged and also unhappy about not being with their social peers as well as the stigma that is associated with being retained (Elizabeth, 2012).

In his evaluation of Integrated Education of Disabled Children (IEDC) program, Sharma (2005), observed that in the State of Maharashtra, (a) the non-availability of trained and experienced teachers, (b) lack of orientation among regular school staff about the problems of disabled learners and their educational needs, and (c) the non-availability of equipment and educational materials were major factors in the failure of the program. Also, lack of coordination among the various departments to implement the scheme was another major factor in the failure of the IEDC plan. Sharma (2005), reported that by 1979-80, only 1,881 learners from 81 schools all over the country had benefited from this program.

ICEVI (2005), suggests that learners with visual impairment are more likely to be over age for their class, either because they are late beginners or have been kept back through lack of progress in academics. The class size is another important consideration in Uganda. The introduction of free Universal Primary Education brought an increase in the number of learners attending school. The huge class sizes raise questions about the quality of education for all learners but they are likely to be even more disadvantageous to learners with visual impairment since they may restrict the opportunities for individual attention. Large print materials are generally unavailable, so it must be assumed that learners with low vision often rely on some other means of assistance from teachers or fellow students to access print and their learning may be predominantly oral. There were no examples of learners who used low vision magnification devices other than spectacles (ICEVI, 2005). These teachers are in the main senior and experienced specialist teachers of the visual impairment. More than 80% of these teachers have diploma level specialist qualifications and about 20% of them have degrees. None had a post-graduate qualification (ICEVI, 2005).

According to statistical figures (MOEST, 2007), there were 23, 459 pupils with disability enrolled in primary schools in 2003. This massive enrolment was realised due to the introduction of FPE. However this huge population was never retained (MOEST, 2010). According to EARC, (2012), the drop-out rate of LWLV 158 (30.2%) is relatively higher compared to that of learners with normal vision 4,475 (10.3%). The reason for the higher drop-out rate of LWLV in regular primary schools in Vihiga County was not yet known. This study therefore sought to establish teachers' perspectives on drop-out of LWLV in regular primary schools in Vihiga County.

## **2.2 Teachers' Perspectives on Influence of Curriculum on Drop-out of Learners with Low Vision**

### **2.2.1 Curriculum Content**

According to American Foundation for the Blind (AFB) (2013), there exist two sets of curriculum for LWLV, the Core curriculum and Expanded Core Curriculum (ECC). AFB (2013), Educators define "core curriculum" as the knowledge and skills expected to be learned by a student by high school graduation. Special educators are faced with a major challenge related to the curriculum for the learners with visual impairment. These challenges exist in the core curriculum where there have to be major adaptations to the standard lessons in English, Social studies, Science, and so forth to allow learners with visual impairment to absorb the concepts (Kirk, 2006). If the curriculum is not adapted, many schools for LWLV will have problems in accommodating the LWLV hence lead to drop out of such learners from school (Kirk, 2006; AFB, 2013).

According to Koenig & Holbrook (2000), specialized instruments with larger numbers or inventive ways of using existing materials can overcome barriers. The use of groups to complete assignments is also useful for providing support not only for LWLV but for all students. Above all, teachers should encourage students to communicate when they are having difficulty in accessing information, completing a task, or understanding a process or skill. In most cases, between the student and the teacher for students with visual impairment and the classroom teacher a solution for any barrier will be discovered. Sands, Kozleski & French (2000) observed that the most important goal of curricular adaptation and modification is to try and match the cognitive, communicative, emotional, and physical aspects of the curriculum with the abilities, strengths and needs of the learners.

According to AFB (2013), the ECC is the body of knowledge and skills that are needed by students with visual impairments due to their unique disability-specific needs. These areas are: daily living skills; sensory perception skills; orientation and mobility; social and emotional skills; communication skills; vocational skills; self-help and advocacy skills (Hatlen, 2000; Gargiulo, 2006; Lohmeier, 2005). Students with visual impairments need the ECC in addition to the core academic curriculum of general education. The ECC should be used as a framework for assessing students, planning individual goals and providing instruction. According to ESHV (2010), it is estimated that approximately 80% of school tasks are based on vision and so it is important that the teaching assistants who are working with such learners are given the correct and appropriate level of guidance.

Professionals recognize that learners with visual impairment must access the ECC that uniquely addresses visual impairment. The ECC is a set of skill areas developed to augment the traditional core curriculum. (Ferrel, 2005 & West, 2005). ECC includes areas of instruction specific to students with visual impairment. Intervention from a teacher for students with visual impairment is necessary to provide direct instruction in the ECC. These areas are: daily living skills; sensory perception skills; orientation and mobility; social and emotional skills; communication skills; vocational skills; self-help and advocacy skills (Hatlen, 2000; Gargiulo, 2006; Lohmeier, 2005). Unless they are actively taught these skills, LWLV are at risk of not being able to function productively within the community (Tanya, 2010). Ajuwon and Oyinlade (2008) argued that in the absence of an ECC, many learners with visual impairment will graduate from secondary school without the required skills and knowledge for post-secondary education, productive employment, independent living and active community involvement.

Soudien (2006) observed that the curriculum is a strong inclusionary and exclusionary device. This is because curricula encompass what is believed to be essential for the students to learn in order to become productive citizens in an inclusive society. Curricula embody the values that we espouse and shape the very essence of our teaching – how we teach, what we teach, where we teach. UNESCO (2005) observed that inclusive schools do not base their teaching on a criterion of averages. Rather, they place learners at the centre of teaching and learning and appreciate the differences in learners’ abilities, understanding, feelings, etc. As did Soudien (2006), UNESCO also provided some questions to consider when developing an inclusive curriculum: What human values promoting inclusion are being fostered through the curriculum? Are human rights and children’s rights part of the curriculum? Do they address the coexistence of rights with responsibilities, and how are they taught? Is the content of the curriculum relevant to learner’s real lives and future? Does the curriculum take gender, cultural identity and language background into consideration (UNESCO, 2005).

The Ministry of Education, Science and Technology (MOEST) Kenya (2003), observed the guidelines stipulating the practice patterns in the country’s education system. These guidelines highlighted the importance of teachers of LWLV in low vision intervention because of their direct interaction with the learners and parents at grassroots. This included programmes such as; vision support teachers training course, district low vision resource centre, hospital-based low vision clinics and school for the blind and integrated programmes for the visual impaired. In Kenya, LWLV have to cover the same curriculum content in a period of eight years like the sighted ones. Teachers who work with such learners may experience challenges in curriculum dissemination and materials adaptation (Yalo, Indoshi, Agak, & Were, 2010). MOEST (2003) observed that KIE has developed and adapted the curriculum mainly for learners with visual impairment. In his study, Factors affecting

administration of integration programme of primary school pupils with visual impairment in Homa Bay District, Nyanza, Okange (2011), observed that a number of primary schools in Homa Bay District integrated the pupils with visual impairment as fulfilment of the integration policies enforced. Pupils Joined Homa Bay programme rather than special schools since it was recommended by educational reports in Kenya. Pupils later started dropping out from the integrated schools as some sought for transfers back to special schools. According to Okange (2011), the factors, which the study revealed to be contributing to that retrogressiveness included non-existence of specialized facilities/equipment, and lack of specialist teachers led to absence of adapted and specialist curriculum. The study revealed that 21.7% of the pupils who were initially integrated had either dropped out from the system or transferred to residential special schools. Although it is noted that the curriculum had been developed and measures put down to ensure it is adapted to meet the educational needs of LWLV in Kenya no research had been carried out to establish whether the adapted curriculum was being taught to LWLV in regular primary schools in Vihiga County. This study therefore sought to determine teachers' perspectives on influence of curriculum content on drop-out of LWLV in regular primary schools in Vihiga County using.

### **2.1.2 Curriculum Delivery**

Professionals who work with learners with visual impairment include: teachers and other professionals like ophthalmologists, optometrists low vision specialists, rehabilitation specialists, assistive technology specialists, orientation and mobility specialists, general education teachers, and SNE teachers (Gargiulo, 2006). According to Bluman (2006), the number of vacancies for teachers of students with visual impairments in the U.S. of America was slightly less than 300. Many of these professionals work in large urban school districts. Rural parts of the United States, with smaller school districts and fewer students with visual

impairments, often lack certified teachers. There is also a shortage of orientation and mobility specialists in U.S.A. With only a small number of universities training orientation and mobility professionals, the need for these specialists by public and residential schools continues to grow.

Teachers and other professionals for LWLV need to be aware of low vision devices provided to LWLV in the school and ensure that they use them to improve on their visual functioning levels. Optical devices involve glasses, telescopes, and magnifying lenses while non-optical devices involve large-print maps, modified writing books, graph papers, flash cards, wide brimmed hats etc. Assistive technology involves:- Adaptive hardware – screen enlargement peripherals, speech synthesizers and voice output devices; Adaptive software – screen readers, screen enlargement software and speech recognition software; Adapted output systems – enhanced image systems and synthesized speech systems; Adapted input systems – voice recognition systems, optical character recognition (OCR) systems. (Kirk, Gallagher, Anastasiow & Coleman, 2006; Gargiulo, 2006; Lussenhop & Corn, 2002; Turnbull & Wehmeyer, 2007).

According to Tanya (2010), Namibia also needs specific training on how to make changes to their methods of instruction because many teachers do not know how. Instructional adaptations involve any part of the teaching-learning process, that is, the teacher's instructional methods, materials and strategies; learning activities; performance requirements for each learner; and assessment procedures. UNESCO (2005) gave some examples on how to make instructional adaptations. They suggested that the teacher provides additional instruction and assistance in areas where the learners experience difficulty; structure practice activities to provide learners with enough time to master skills; be flexible with regard to a

time-frame; provide special support in particular subjects (e.g. orientation and mobility) over and above the periods allotted for more traditional subjects; and change task requirements so that learners can listen rather than read, or give answers orally rather than write. It is helpful if teachers limit the number of problems that the learners with visual impairment must solve or the number of paragraphs that they must write. They also recommended that teachers group learners with similar needs for instruction and then change again as needed. This process focuses on the diversity of needs of all students by increasing participation in learning, cultures, and communities and reducing exclusion within and from mainstream education (UNESCO, 2005). Tanya (2010) also observed that most learners with visual impairment come from impoverished backgrounds and from rural or smaller towns. Many of their parents are not involved in their schooling and are not able to give financial support (Fransman, principal of NISE-Blind, personal communication, August, 21, 2009).

MOEST (2003) observed that most of the schools for LWLV are operating with barely basic learning aids; some of the learners who need individual learning resources have none or are being forced to share. This was found to have adverse effects on their learning. For example, while it is possible for learners without disability to share textbooks, those with low vision due to the individual way of holding books cannot share; many parents cannot afford the assistive devices; many schools are unable to service, repair and maintain the educational and assistive devices due to lack of spare parts and technical know-how. It is estimated that 19% of the entire population of learners with special needs which stands at 5,200 benefits from education services in Kenya. Religious organizations and NGO such as Sight Savers International, KSB, African Braille Centre and Christoffel Blindenmission have been in the forefront in ensuring that learners with visual impairment access quality education in primary schools through programmes such as Kenya Integrated Education Programme and KIEP

(MOEST 2003; Kiarie, 2004). Since these NGOs operate in only 50 districts in Kenya, the supply and distribution of these educational resources was found to be inadequate hence many learners with visual impairment do not get access to them in some cases (MOEST, 2003). Annually, children with special needs are allocated Ksh.3, 020 by the government which is Ksh.2, 000 more than what other children get, but children with special education needs require at least Ksh.18, 000 to give them an education that is at par with their mainstream classmates (Gachiri, 2010). Kenya is now making some strides towards embracing technology in the teaching/learning process of learners with special needs in order to enhance their capacities. Last year, (2009), the Communications Commission of Kenya launched a sh32 million project to equip eight institutions serving persons with special needs with assistive software for the visual impairment and the deaf. This week, 31<sup>st</sup> March 2010, the president opened 24hour radio and television stations which among others, endeavour to increase education opportunities for learners with disabilities (Wambugu, 2010).

According to MOEST (2003) insufficient numbers of trained teachers was observed to have an effect on teacher-learner ratio in the schools. The average teacher-learner ratio is 1:55. MOEST (2003) further observed that while institutions for SNE lack trained teachers in SNE, there are many teachers with SNE training from Maseno University who have not been posted by TSC since 2001. Most of the graduates from Kenyatta University fail to return to the special schools they were serving before joining the University hence increase on demand for more SNE teachers (MOEST, 2003). The Task Force further noted that SNE teachers do not have an established promotional structure or scheme of service. This could be one of the reasons why most of the teachers opt to go to other programmes. The Task Force also noted the high drop-out rate of about more than one out of ten among SNE teachers every year due to natural causes, especially those related to the HIV&AIDS scourge. Support services of

other professionals are lacking in the education system (MOEST, 2003). According to the head teachers interviewed, it has been further established that only 50% of the learners enrolled in the integrated schools are handled by teachers with requisite special skills. In Kenya it is estimated the ratio of pupil to specialized teacher is 1:20. The recommended PTR is 1: 5 (KSB, 2011). According to EARC (2012), although most of the teachers handling LWLV were claiming to provide for the needs of these learners, 4 (1%) had the capacity to do so. There was no any other professional apart from SNE officers. Most of the teachers had misconceptions about low vision and LWLV. Although literature shows that the curriculum was poorly implemented in Kenya, no research had been carried out to establish whether the way the curriculum was implemented influenced drop-out of LWLV in regular primary schools in Vihiga County. This study therefore sought to determine teachers' perspectives on influence of curriculum delivery on drop-out of LWLV in regular primary schools in Vihiga County.

### **2.1.3 Curriculum Evaluation**

According to AFB (2013), different types of accommodations and modifications can help visually impaired students take their class tests alongside their sighted classmates. To have the same opportunity as the rest of class to complete all the items on his class tests and to take the tests independently, he will need to be allotted more time than the other students because he or she reads or writes slowly, or because of the tools he or she uses for reading or writing. They need: explanation and to be given examples of classroom testing; use of manipulative to demonstrate understanding, rather than responding in writing to a question, for example, a first-grade student demonstrates an understanding of time by using a model of a clock to show the answers on a test; the student verbally reports an answer, and a sighted person

records the answer on the answer sheet; depending on your child's need to read in print or braille, appropriate screen access to text may be needed through enlarged text.

Most school educators in India are concerned that integration of students with disabilities would result in lowering school standards because these students won't be able to pass exams (Sharma & Desai, 2002). This seems to be a genuine concern of teachers because it can influence their promotion. Thus, it is necessary to establish an alternative system of examination for students with disabilities. Such an examination system is already in practice in the U.S. America. Students in this system are asked to do activities that demonstrate their abilities rather than disabilities. It is expected that teachers in India would feel more comfortable including students with disabilities in their classrooms if such a system existed (Sharma & Desai, 2002). The Final Report of the National Policy on Inclusive Education in Namibia (Väyrynen, 2008) stated that with regard to exams, a wide range of assessment methods should be developed in order to reflect the diversity of the learners and not to place any learner at a disadvantage due to background, language, or disability.

MOEST (1988) highlights the need for development of appropriate learning and examination needs for learners with special needs. Furthermore, MOEST (1999) advocates for an indiscriminatory registration of learners with disabilities in national examinations and adaptation of examination papers for learners with handicapping conditions to suit their needs. In Kenya, students with visual impairment are required to take the same examinations as the general population of students with regard to the cognitive skill areas. They are provided with some accommodations and adaptations regarding the time. These students have an additional 30 minutes within which to complete national examinations and discussions are underway to assess the adequacy of that time accommodation and to recommend additional

time if necessary. There are also plans to improve interactions between examination officers in charge of various test subjects and experts in special education to ensure that necessary adaptations as appropriate are made (Waihenya, 2000). Literature shows that measures had been put in place to ensure that examinations are adapted to meet the educational needs of LWLV in Kenya. On the contrary, no research had been carried out to establish whether the examinations were adapted to meet the educational needs of LWLV in regular primary schools in Vihiga County. This study therefore sought to determine teachers perspectives on influence of curriculum evaluation on drop-out of LWLV in regular primary schools in Vihiga County.

### **2.3 Teachers' Perspectives on Influence of Physical Environment on Drop-out of Learners with Low Vision**

The environmental adaptations for learners with visual impairment include lighting; colour contrast; distance and time (Kirk, et al... 2006; Gargiulo 2006). Physical environment can be modified to meet specific needs of LWLV (Kirk et al., 2006). A child with low vision must be empowered to negotiate the physical environment skilfully and confidently. Opportunities for exploration must be provided for good posture, good health and flexible muscles. With confident movement, the child can achieve good self-esteem and master independent travel within the community (Gargiulo, 2006). Students with low vision are often at a disadvantage when presented with information in regular classrooms. If a student has difficulty seeing material at a distance, writing on chalkboards will be hard to discern. Preferential seating is a ways that the information can be more easily accessed by the student. (American Foundation for the Blind, 2010; Visual Impairment Guide, 2010; Texas School for the Blind and Visually Impaired, 2010).

Kirk (2006), observed that in most cases, we increase the mobility of individuals with visual impairment by teaching them ways to get around or to use available tools. But there is another way to ease the restriction on those who have visual impairment. Society has a responsibility to remove obstacles wherever possible. That responsibility became law in 1991 with the passage of the Americans with Disabilities Act, which directs businesses and public officials to remove barriers for persons with disabilities to ensure that they continue to interact with the environment well. According to Tanya (2010), Environmental changes are changes in the physical environment of the classroom. For example, a teacher may arrange learner desks or learning materials in such a way as to make it easily accessible to all learners. The classroom itself may be structured so that there are several work stations with activities of different levels of difficulty and activities for different styles of learning. For example, one station can be more visually-based such as maps, diagrams and pictures; another station can focus on auditory learning with a tape recorder or the teacher giving verbal instructions; and lastly another station may have computers where learners can type instead of write and do extra research on the topic of the week.

School environments lack ramps to buildings, pavement rails, appropriate colour and improved lighting. The import is that ECC is inhibited hence affecting quality education in Africa (KSB, 2011). In the context of Namibia, these environmental adaptations present challenges due to the large numbers of learners in each class, placing a limit on the space available (Tanya, 2010). In Uganda, up to 85% of school environment is inaccessible to learners with visual impairment and an impediment to the realization of quality education since most of the LWLV end up dropping out of school. It would be reasonable to assume that distance from school is a factor in attendance rates, since independent travel for learners with visual impairment over distances may be challenging. However, with the exception of

learners who attend residential units attached to mainstream schools, most of the learners with visual impairment in the survey carried out in Uganda ‘An Investigation into the educational inclusion of learners with a visual impairment, live within 2 km of their schools (ICEVI, 2005). Further analysis reveals that about 75% of these learners walk to school and less than 10% use public transport. The presence of sighted siblings is likely to provide opportunities for learners to be escorted to school so distance from school does not seem to be a major factor affecting attendance (ICEVI, 2005).

MOEST (2008), observed that currently, the learning environment including the location of institutions, buildings, amenities, equipment and furniture pose accessibility challenges to learners with disabilities. This implies that the physical environment where learners with special needs operate should allow them to access education with minimal hindrance. School (and other related) environments that are disadvantageous to learners with special needs include: class learning environment; social amenities like churches and mosques; public transport on buses and minibuses; and public utilities like libraries, toilets, telephones and lifts. The main challenges relating to access and equity in the provision of education and training to learners with special needs include inappropriate infrastructure and inadequate facilities and lack of equipment for the learners included in regular institutions (MOEST, 2008). MOEST (2003), stipulates that learning institutions should provide auxiliary services to facilitate the learning process for people with disabilities. EARC (2012), observed that over 482 (90%) of the primary schools in Vihiga County are permanent in structure but 10 (2%) have considered the specifications for accommodating learners with disabilities. Although literature shows that the physical environment of regular primary schools in Kenya is unfriendly for LWLV, no research had been carried out to find out whether the unfriendly physical environment influenced drop-out of LWLV. This study therefore sought to find out

teachers' perspectives on influence of physical environment on drop-out of LWLV in regular primary schools in Vihiga County.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Research Design**

This study used descriptive survey research design. Descriptive survey research design was advantageous to this study because it is simple and easy to administer; appropriate for educational fact finding; yields enormous accurate information on peoples' feelings, attitudes, opinions, interests and problems, (Bluman, 2004). It enabled contact with the people earmarked for the study. It facilitated gathering of data at a particular point in time and used it to describe the nature of the existing learning conditions for LWLV in regular primary schools. The use of descriptive survey research design facilitated analysis and interpretation of information on influence of curriculum and physical environment on drop-out of LWLV in regular primary schools in Vihiga County, Kenya.

#### **3.2 Area of Study**

The study was carried out in Vihiga County, Western Province, Kenya. Vihiga County is one of the four Counties in the old Western Province. It borders Kakamega District to the North, Nandi District to the east, Kisumu District to the south, Siaya District to the southwest and Butere/Mumias District to the northwest (MOFAP, 2002). It is among the smallest Counties in Kenya having hills, valleys and streams and lies between longitudes 34° 30' and 35° 0' east of the prime meridian and latitudes 01° 5' north. The equator cuts across the southern tip of the County. The County covers a total area of 563km<sup>2</sup> and lies between 1,300m and 1,500m above sea level with an average annual precipitation of about 1,900mm. The income of the County is basically derived from the sale of agricultural products that constitutes 80% of the household income. Vihiga County has a population density of 975 persons per square kilometre, making it the third most densely populated County in Kenya after Nairobi and

Mombasa Counties. The high population exerts pressure on resources and services. The poverty reduction strategy paper report 2001 – 2004 indicated that 65% of the county population is poor. The County is mainly inhabited by the Luhya community with strong Christian backgrounds (origin of Pentecostal Assemblies of God, Divine, Quakers, and Israel Nineve churches in Kenya). The teacher population in primary schools is 5,220 (MOFAP, 2002). Vihiga County was selected as an area of study on the premise of it having a high drop-out of LWLV yet 24 pilot regular primary schools had been selected by EARC to address the needs of LWLV.

### **3.3 Population of the Study**

The study population comprised 24 head teachers, 490 teachers, 117 LWLV in school and 158 Drop-out LWLV from 24 regular primary schools in Vihiga County.

### **3.4 Sample and Sampling Technique**

Saturated sampling technique was used to select 22 head teachers, 105 LWLV in school and 142 Drop-out LWLV. This sampling technique is used when a sample is small (Bluman, 2004). Simple random sampling technique was used to select 147 teachers (30% of the study population). According to Bluman (2004), simple random sampling technique is least biased and best represents a population.

**Table 3.1: Sampling Frame**

<b>Category of Respondents</b>	<b>Total Population</b>	<b>Sample</b>	<b>Percentages (%)</b>
Head teachers	24	22	91.67
Teachers	490	147	30.00
LWLV in school	117	105	89.74
Drop-out LWLV	158	142	89.87

### **3.5 Research Instruments**

This study used questionnaire, interview schedule, document analysis guide and check list as instruments for data collection.

#### **3.5.1 Teachers' Questionnaire (TQ)**

A questionnaire was designed for teachers. Questionnaires allow collection of information over a short period of time (Best and Kahn, 2006). The teachers' questionnaire elicited information on drop-out of LWLV, adaptations made on the curriculum and physical environment for LWLV in regular primary schools. The teachers' questionnaire was made up of a 5-level Likert scale type of closed-ended questions (Appendix A).

#### **3.5.2 Interview Schedule (IS)**

Interview schedule was used to solicit information from head teachers, teachers, LWLV in schools and Drop-out LWLV. According to Bluman (2004), an interview schedule is often superior as compared to other research instruments. An interview schedule is a method of collecting data where an investigator gathers data directly from respondents on a face to face contact. The use of interview schedule was appropriate for this study as it was used to corroborate data elicited from the questionnaire (Appendix B).

### **3.5.3 Document Analysis Guide (DAG)**

The school documents that were analysed included: class registers, admission registers, past examination papers, school teaching staff record and school fees records. Document analysis guide was completed by the researcher. It solicited information on class sizes, low vision conditions, nature and use of examination for LWLV, total scores of LWLV in end term examinations, number of teachers training/trained in special education and fee balances of drop-out LWLV (See Appendix C).

### **3.5.4 The Check List (CL)**

Check list had three columns; the first column had a list of low vision devices, the second column solicited information on the availability of the devices, while the third column was designed to find out whether LWLV had been trained to use them (See Appendix D).

## **3.6 Validity and Reliability of Research Instruments**

### **3.6.1 Validity of Research Instruments**

Validity refers to the quality of data gathering instrument or procedure that enables an instrument to measure what it is supposed to measure (Best and Kahn, 2006). Face and content validity was used to verify the validity of the research instruments that were used in this study. Research instruments were presented to experts from Department of SNE, Maseno University who were conversant with the topic of study to determine the extent to which the items measured what they were intended to measure. The feedback from the experts was used to revise the instruments before they were administered in the field.

### **3.6.2 Reliability of Research Instruments**

Reliability of the instrument was established using test-retest method on a pilot study of 2 head teachers, 49 teachers 12 LWLV in schools and 16 drop-out LWLV (10% of the entire population). They were selected using simple random sampling technique. This technique ensured that each member of the target population had an equal and independent chance of being included in the sample. Questionnaires and interview schedules were administered. The questionnaires were collected from respondents after three days. Interview schedules, document analysis guide and check list were administered to head teachers, teachers, LWLV in school and LWLV who had dropped out of the respective schools by the researcher himself. After 2 weeks, the same test was administered again to the same respondents. Later, the test was marked and necessary corrections made on the research instruments. The pilot population helped the researcher to identify inconsistencies, inadequacies and weakness of the research instrument and corrections were made before presenting it to the target population. Reliability coefficient of the instruments was ascertained using Pearson's  $r$  method. The reliability coefficient for the teachers' questionnaire and the interview schedule was 0.74.

### **3.7 Data Collection Procedure**

An introductory letter was obtained from the School of Graduate Studies (S.G.S), Maseno University. A courtesy call was made to the Provincial Director of Education (PDE) office Western Province. The District Education Officers (DEOs) offices of the 4 districts of Vihiga County were informed about the research. Permission was sought from the head teachers and the participants were met and addressed for good public relations. The questionnaire was given to the respondents for filling. The interview schedule, document analysis guide and

check list were completed by the researcher. The questionnaire was later collected after three days.

### **3.8 Methods of Data Analysis**

Descriptive statistics such as frequency counts, percentages and means as well as Pearson's  $r$  correlation technique were used to analyse quantitative data. Data collected from the questionnaire was first coded manually and then analysed using the Statistical Package for Social Sciences (SPSS) – 15.0 version. Frequency counts, percentages and means for each test item on: adaptations made on curriculum and physical environment and factors influencing drop-out of LWLV in regular primary schools was worked out. The positively stated items on 5-level Likert scale were coded with each of the five points on the Likert scale being given; Strongly Disagree – 1 point, Disagree – 2 points, Undecided (U) – 3 points, Agree – 4 points, Strongly Agree – 5 points. For those statements that were negative, the scoring procedure was reversed. Pearson's  $r$  correlation was used to establish the influence of curriculum and physical environment on drop-out rate of LWLV in regular primary schools. It was then presented using tables. Qualitative data collected from interview schedule, document analysis guide and check list was put into various categories and reported in an on-going process as themes and sub-themes emerged.

In the interpretation of data, a mean score of above 3 implied that most of the respondents were in agreement with the statement. A mean score of below 3 implied that most of the respondents were in disagreement with the statement while a mean score of 3 implied a neutral response. A correlation co-efficient of above 0.5 implied influence of curriculum or physical environment on drop-out rate of LWLV; a correlation coefficient of below 0.5 implied no influence while a correlation coefficient of 0.5 implied a neutral influence.

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **4.1 Teachers' Perspectives on Drop-out of LWLV in Regular Primary Schools**

When teachers were asked to indicate whether they strongly agreed, agreed, were undecided, disagreed or strongly disagreed to statements on drop-out of LWLV in regular primary schools, they responded as in table 4.1.1.

**Table 4.1.1: Teachers’ Perspectives on Drop-out of LWLV in Regular Primary Schools (n=147)**

Drop-out of LWLV	SA	A	U	D	SD	Mean
	f (%)	f (%)	f (%)	f (%)	f (%)	
LWLV drop-out of schools due to poor performance	51 (34.7)	73 (49.7)	7 (4.8)	10 (6.8)	6 (4.1)	4.04
LWLV drop-out of school due to inadequate teaching staff	31 (21.1)	68 (46.3)	3 (2.0)	29 (19.7)	16 (10.9)	3.47
LWLV are sent-out of school due to indiscipline cases	1 (0.7)	2 (1.4)	5 (3.4)	34 (23.1)	105 (71.4)	1.37
Lack of adapted learning resources make LWLV drop-out of school	34 (23.1)	79 (53.7)	4 (2.7)	19 (12.9)	11 (7.5)	3.72
LWLV opt to drop-out of school rather than rewind classes	52 (35.4)	63 (42.9)	5 (3.4)	18 (12.2)	9 (6.1)	3.89
LWLV drop-out of school due to lack of funds	18 (12.2)	26 (17.7)	6 (4.1)	57 (38.8)	40 (27.2)	2.49
LWLV avoid going to school due to its inaccessibility	5 (3.4)	6 (4.1)	3 (2.0)	41 (27.9)	92 (62.6)	1.58
LWLV drop-out of school due to lack of individual attention	22 (15.0)	29 (19.7)	6 (4.1)	52 (35.4)	38 (25.9)	2.63

**Key:** SA - Strongly Agree, A - Agree, U - Undecided, D - Disagree, SD - Strongly Disagree, f - Frequency, %- percentage n - Number of respondents **Minimum Score** - 1 point, **Maximum score** - 5 points.

#### **4.1.1 LWLV Drop-out of School due to Poor Performance**

When teachers were asked to indicate whether LWLV drop-out of schools due to poor performance (Table 4.1.1), they responded as follows: 51 (34.7.9%) of teachers strongly agreed, 73 (49.7%) agreed, 7 (4.8%) were undecided, 10 (6.8%) disagreed while 6 (4.1%) strongly disagreed. Results pointed out that 124 (84.4%) of the respondents agreed with the statement. The (M=4.04) indicated agreement with the statement. Results from the document analysis guide indicated that 85 (59.9%) Drop-out LWLV rarely obtained an average mark of 250 in the end term exams. When asked what made them drop-out of school, one of them said, “I was not doing well in school.” Findings of this study concur with that of ICEVI (2005), who observed that caution must be taken on the findings on academic performance. The responses that were given indicated a wide range of performance, with 40% of the LWLV missing the average mark. ICEVI (2005) further noted that most of the LWLV who rarely obtained pass mark ended up dropping out of school.

#### **4.1.2 LWLV Drop-out of School due to inadequate Teaching Staff**

Teachers responded as follows when asked to indicate whether LWLV drop out of school due to inadequate teaching staff (Table 4.1.1): 31 (21.1%) of teachers strongly agreed, 68 (46.3%) agreed, 3 (2.0%) were undecided, 29 (19.7%) disagreed while 16 (10.9%) strongly disagreed. These results indicated that 99 (67.4%) of the respondents agreed with the statement. The (M=3.47) indicated agreement with the statement. Table 4.1.2 shows the number of teachers training/trained in SNE and the level of training.

**Table 4.1.2: Teachers Training/Trained in SNE (n=490)**

<b>Course</b>	<b>Training</b>	<b>Trained</b>	<b>Total</b>
	<b>f (%)</b>	<b>f (%)</b>	<b>f (%)</b>
Certificate	-	-	-
Diploma	18 (3.7%)	10 (2.0%)	28 (5.7%)
Degree	2 (0.4%)	5 (1.0%)	7 (1.4%)
<b>Total</b>	<b>20 (4.1%)</b>	<b>15 (3.1%)</b>	<b>35 (7.1%)</b>

n – Number of teachers

f – Frequency

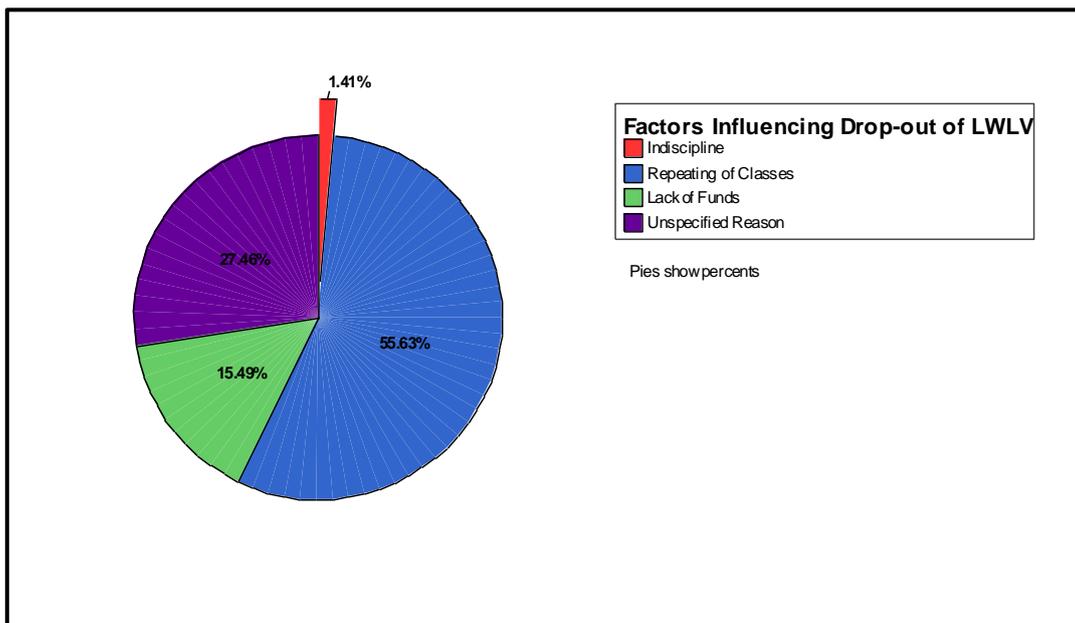
% - Percentage

Results from table 4.1.2 indicated that out of the 490 teachers in primary school, 20 (4.1%) of them are training while 15 (3.1%) are already trained in SNE. Although 35 (7.1%) of the teachers in primary schools are either training or trained in SNE, results from the teachers' questionnaire indicated that only 5 (14.3%) of these teachers had special training in the area of visual impairment. Results of this study concur with that of Friends (2008), which indicated that personnel issues in the field of visual impairment are compounded by other factors. For example, because visual impairment is a low incidence disability, university programs tend to enrol small numbers of students. Economic pressures result when teacher education courses have low enrolment and do not produce very many credit hours; some programs are being forced to reduce or close preparation programs in this area, thus making the personnel shortage even worse. In addition, the number of professionals that is reportedly required is probably an underestimate because some school districts with students in need of services know that they simply will not be able to find the appropriate specialists and so do not even list such positions as unfilled (Mason, Davidson, & McNerney 2000). Finally,

anticipated retirements among professionals in the field may make the problem of finding qualified personnel even more severe.

#### 4.1.3 LWLV are Sent out of School due to Indiscipline

When teachers were asked to indicate whether LWLV are sent out of school due to indiscipline (Table 4.1.1), they responded as follows: 1 (0.7%) of teachers strongly agreed, 2 (1.4%) agreed, 5 (3.4%) were undecided, 34 (23.1%) disagreed while 105 (71.4%) strongly disagreed. These results indicated that 139 (94.5%) of the respondents disagreed with the statement. The (M=1.37) indicated disagreement with the statement.



**Figure 4.1: Graphical Representation of Percentage of LWLV who Dropped out of Regular Primary School due to Indiscipline (n=142).**

Results obtained from figure 4.1.1 revealed that 2 (1.41%) of the LWLV were sent out of school due to indiscipline. Findings of this study concur with those of ICEVI (2005), which

observed that when class teachers were asked how well they felt learners with visual impairment interacted with their fellow students their response was that more than 80% of learners with visual impairment interacted well or very well in the regular school setting.

#### **4.1.4 Lack of Adapted Learning Resources make LWLV Drop-out of School**

Teachers responded as follows when asked to indicate whether lack of adapted learning materials make LWLV drop out of school (Table 4.1.1): 34 (23.1%) of teachers strongly agreed, 79 (53.7%) agreed, 4 (2.7%) were undecided, 19 (12.9%) disagreed while 11 (7.5%) strongly disagreed. These results showed that 113 (76.8%) of the respondents agreed with the statement. The (M=3.72) indicated agreement with the statement. Table 4.1.3 shows the number of regular primary schools with adapted learning resources for LWLV and whether they are used.

**Table 4.1.3: Availability and Use of Adapted Learning Resources (n=22)**

Low Vision Devices	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
1. Adapted hardware	0 (0.0)	22 (100.0)	N/A	N/A
2. Adapted software	0 (0.0)	22 (100.0)	N/A	N/A
3. Adapted input systems	0 (0.0)	22 (100.0)	N/A	N/A
4. Adapted output systems	10 (45.5)	12 (54.5)	4 (18.2)	18 (81.8)
5. Large print textbooks	0 (0.0)	22 (100.0)	N/A	N/A
6. Large sized exercise books	18 (81.8)	4 (18.2)	18 (81.8)	4 (18.2)
7. Concrete materials	22 (100.0)	0 (0.0)	22 (100.0)	0 (0.0)
8. Lenses	19 (86.4)	3 (13.6)	11 (57.9)	8 (42.1)
9. Magnifiers	2 (9.1)	20 (90.9)	0 (0.0)	2 (100.0)
10. Closed-Circuit Television	0 (0.0)	22 (100.0)	N/A	N/A

n – Number of schools

f – Frequency

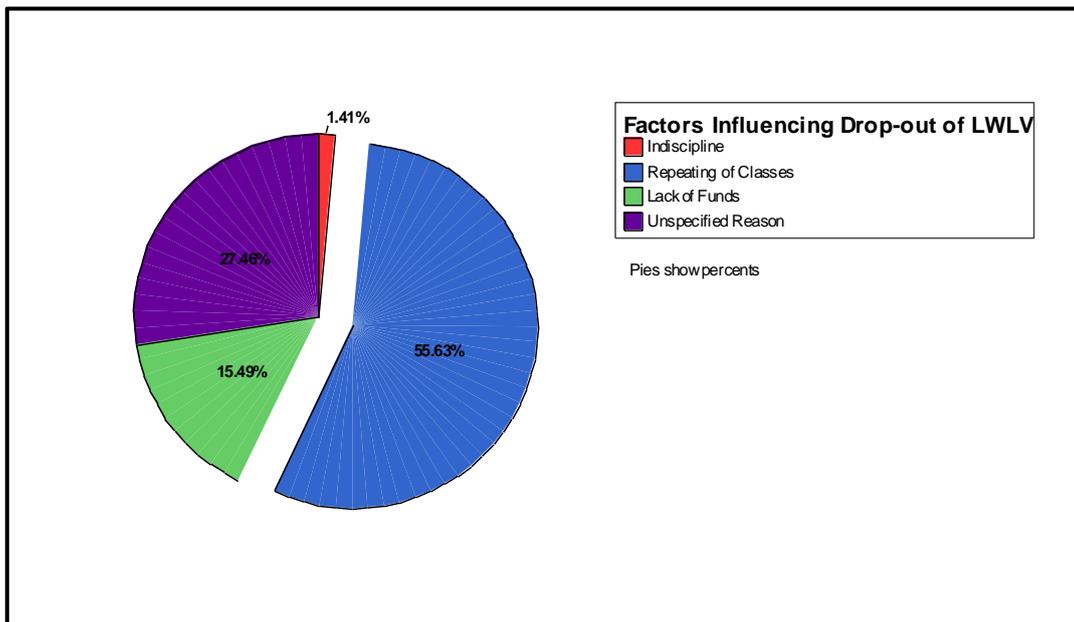
% - Percentage

From table 4.1.3 it was evident that regular primary schools in Vihiga County lacked important learning materials for LWLV. These include: large print textbooks 0 (0.0%), magnifiers 2 (9.1%), Closed Circuit Television 0 (0.0%), adapted hardware 0 (0.0%), adapted software 0 (0.0%) and adapted input systems 0 (0.0%). When asked what made them drop-out of school, a Drop-out LWLV said, “It was difficult for me to use the ordinary exercise and text books.” Findings of this study concur with MOEST (2003) who observed that most of the schools for LWLV are operating with barely basic learning aids; some of the learners who need individual learning resources have none or are being forced to share. This was

found to have adverse effects on their learning leading to their drop-out from school. For example, while it is possible for learners without disability to share textbooks, those with low vision due to the individual way of holding books cannot share; many parents cannot afford the assistive devices; many schools are unable to service, repair and maintain the educational and assistive devices due to lack of spare parts and technical know-how.

#### 4.1.5 LWLV opt to Drop-out of School rather than Repeat Classes

When teachers were asked to indicate whether LWLV opt to drop out of school rather than repeat classes (Table 4.1.1), they responded as follows: 52 (35.4%) of teachers strongly agreed, 63 (42.9%) agreed, 5 (3.4%) were undecided, 18 (12.2%) disagreed while 9 (6.1%) strongly disagreed. Results pointed out that 115 (88.3%) of the respondents agreed with the statement. The (M=3.89) indicated agreement with the statement.

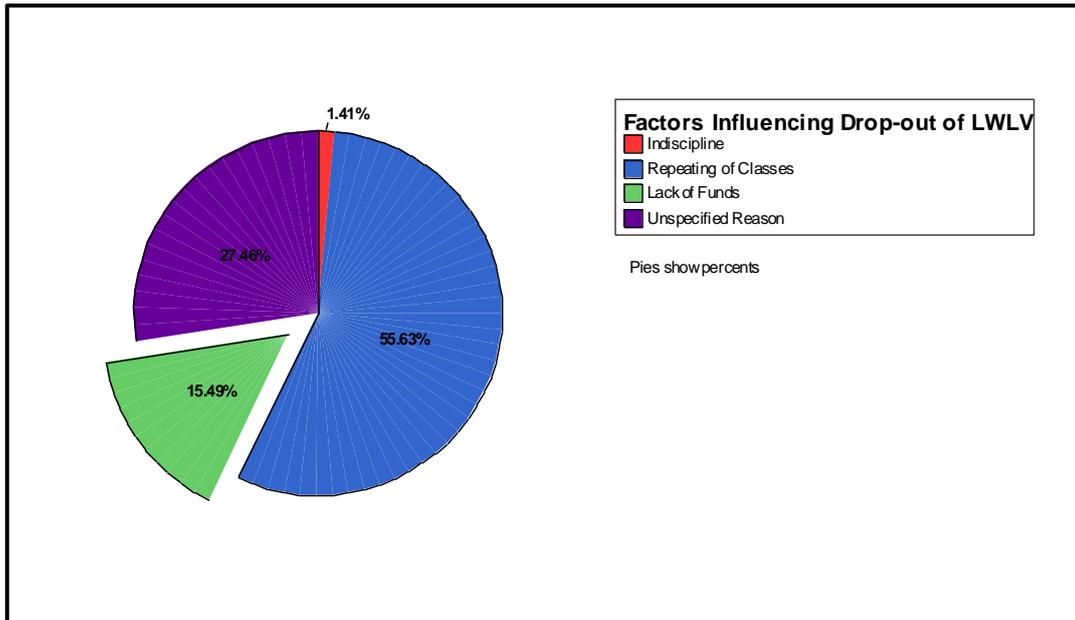


**Figure 4.2: Graphical Representation of Percentage of LWLV who Dropped out of Regular Primary School due to Repeating of Classes (n=142).**

Results obtained from figure 4.1.2 revealed that 79 (55.63%) of the LWLV opt to drop-out of school rather than repeat classes. Findings of this study concur with those of Elizabeth (2012), who pointed out that according to the United States Department of Education, during the 1998-1999 school year, the drop-out rate of students with special needs was about 28 percent. That rate was approximately twice that of regular education students. While the number seems alarming, there are several contributing factors. These include: Students that struggle academically and fail classes often end up repeating classes. Repeating of classes is another reason that students drop-out. They feel discouraged and also unhappy about not being with their social peers as well as the stigma that is associated with repeating a class.

#### **4.1.6 LWLV Drop-out of School due to lack of Funds**

Teachers responded as follows when asked to indicate whether LWLV drop out of school due to lack of funds (Table 4.1.1): 18 (12.2%) of teachers strongly agreed, 26 (17.7%) agreed, 6 (4.1%) were undecided, 57 (38.8%) disagreed while 40 (27.2%) strongly disagreed. Results pointed out that 97 (66.0%) of the respondents disagreed with the statement. The (M=2.49) indicated disagreement with the statement. Findings from the interview schedule indicated that: 31 (21.8%) of Drop-out LWLV had fees balances; When asked where the school get funds to meet the educational needs of LWLV, head teachers responses were as follows: “FPE fund.” “Well-wishers” Findings of this study disagreed with MOEST (2008), who pointed out that cost of providing educational services to learners with disabilities is relatively high and constitutes the single most limiting factor to increased enrolment, retention and transition of such learners within educational programmes.



**Figure 4.3: Graphical Representation of Percentage of LWLV who Dropped out of Regular Primary School due to Lack of Funds (n=142).**

Results obtained from figure 4.1.3 revealed that 22 (15.49%) of the LWLV dropped out of regular primary schools due to lack of funds. Findings of this research concurs with (MOEST, 2003) who observed that considering that over 50% of Kenyans live below the poverty line, many parents of learners with special needs in education cannot afford to pay for the boarding fees as well as the necessary assistive/functional devices, medication and other requirements for their children.

#### **4.1.7 LWLV avoid going to School due to its Inaccessibility**

When teachers were asked to indicate whether LWLV avoid going to school due to its inaccessibility (Table 4.1.1), they responded as follows: 5 (3.4%) of teachers strongly agreed, 6 (4.1%) agreed, 3 (2.0%) were undecided, 41 (27.9%) disagreed while 92 (62.6%) strongly disagreed. These results indicated that 133 (90.5)% of the respondents disagreed with the

statement. The (M=1.58) indicated disagreement with the statement. When asked how they travel/travelled to school and back home, most of LWLV in schools and drop-outs said, “On foot.” Very few said, “I use/used motorcycles.” or “I use/used motorcar.” Findings of this study concur with that of ICEVI (2005), who pointed out that it would be reasonable to assume that distance from school is a factor in attendance rates, since independent travel for learners with visual impairment over distances may be challenging. However, with the exception of learners who attend residential units attached to mainstream schools, most of the learners in the survey live within 2 km of their schools. Further analysis revealed that about 75% of these learners walk to school and less than 10% use public transport. The presence of sighted siblings is likely to provide opportunities for learners to be escorted to school so distance from school does not seem to be a major factor affecting attendance (ICEVI 2005).

#### **4.1.8 LWLV Drop-out of School due to Lack of Individual Attention**

Teachers responded as follows when asked to indicate whether LWLV drop-out of school when their special educational needs are not addressed (Table 4.1.1): 22 (15.0%) of teachers strongly agreed, 29 (19.7%) agreed, 6 (4.1%) were undecided, 52 (35.4%) disagreed while 38 (25.9%) strongly disagreed. Results pointed out that 80 (61.3%) disagreed with the statement. The (M=2.63) indicated disagreement with the statement. When asked what made them drop-out of school, most Drop-out LWLV said, “There was no one to take care of my problems.” Findings of this research disagree with those of ICEVI (2005), which noted that the introduction of free Universal Primary Education increased enrolment of learners in schools. The huge class sizes raised questions about the quality of education for all learners but they are likely to be even more disadvantageous to learners with visual impairment since they may restrict the opportunities for individual attention leading to huge drop-outs of learners with visual impairment.

#### **4.2: Establish Teachers' Perspectives on influence of Curriculum adaptations on Drop-out of LWLV**

When teachers were asked to indicate whether they strongly agreed, agreed, were undecided, disagreed or strongly disagreed to statements on curriculum adaptation for LWLV in regular primary schools, they responded as in table 4.2.1.

**Table 4.2.1: Teachers Perspectives on Curriculum Adaptations for LWLV (n=147)**

Curriculum Adaptation	SA	A	U	D	SD	Mean
	f (%)					
LWLV have low vision devices	8 (5.4)	16 (10.9)	6 (4.1)	27 (18.4)	90 (61.2)	1.81
LWLV are trained to use low vision devices	5 (3.4)	4 (2.7)	15 (10.2)	50 (34.0)	73 (49.7)	1.76
Multisensory strategy is used to get learners experiences	75 (51.0)	59 (40.1)	5 (3.4)	6 (4.1)	2 (1.4)	4.35
LWLV are given breaks between and within activities	12 (8.2)	38 (25.9)	2 (1.4)	45 (30.6)	50 (34.0)	2.44
Examinations are adapted for LWLV	8 (5.4)	22 (15.0)	6 (4.1)	39 (26.5)	72 (49.0)	2.01
There is enough human resource to address the educational needs of LWLV	4 (2.7)	4 (2.7)	0 (0.0)	67 (45.6)	72 (49.0)	1.65
LWLV are taught using ECC	2 (1.4)	5 (3.4)	10 (6.8)	44 (29.9)	86 (58.5)	1.59
Teachers individualize their teaching	1 (0.7)	4 (2.7)	3 (2.0)	60 (40.8)	79 (53.7)	1.56

**Key:** SA - Strongly Agree, A - Agree, U - Undecided, D - Disagree, SD - Strongly Disagree, f - Frequency, %- percentage n - Number of respondents **Minimum Score** - 1 point, **Maximum score** - 5 points.

#### **4.2.1 LWLV have Low Vision Devices**

When teachers were asked to indicate whether LWLV have low vision devices (Table 4.2.1), they responded as follows: 8 (5.4%) of teachers strongly agreed, 16 (10.9%) agreed, 6 (4.1%) were undecided, 27 (18.4%) disagreed while 90 (61.2%) strongly disagreed. These results indicated that most of the respondents 117 (79.6%) disagreed with the statement. The (M=1.81) indicated disagreement with the statement. Findings of this study concur with ICEVI (2005), who observed that large print materials are generally unavailable, so LWLV often rely on some other means of assistance from teachers or fellow students to access print and their learning may be predominantly oral and this situation hampers their schooling. Table 4.2.2 shows number of regular primary schools with low vision devices in Vihiga County, Kenya.

**Table 4.2.2: Availability of Low Vision Devices (n=22).**

Low Vision Devices	Available	
	Yes	No
	f (%)	f (%)
1. Adapted computer hardware	0 (0.0)	22 (100.0)
2. Adapted computer software	0 (0.0)	22 (100.0)
3. Adapted input systems	0 (0.0)	22 (100.0)
4. Adapted output systems	8 (36.4)	14 (63.6)
5. Large print textbooks	0 (0.0)	22 (100.0)
6. Large sized exercise books	10 (45.5)	12 (54.5)
7. Concrete materials	22 (100.0)	0 (0.0)
8. Lenses	19 (86.4)	3 (13.6)
9. Magnifiers	2 (9.1)	20 (90.9)
10. Reading and writing stand	1 (4.5)	21 (95.5)
11. Closed-Circuit Television	0 (0.0)	22 (100.0)

n – Number of schools

f – Frequency

% - Percentage

Results from table 4.2.2 showed that schools lacked low vision devices. These included; adapted computer hardware 22 (100.0%), adapted computer software 22 (100.0%), adapted input systems 22 (100.0%), adapted output systems 14 (63.6%), large print textbooks 22 (100.0%), reading and writing stands 21 (95.5%), magnifiers 20 (90.9%) and Closed-Circuit Television 22 (100.0%). Findings of this study concur with those of Yalo et al... (2010) & Bachofer (2007), who pointed out that LWLV lacked books with large print books. Without preferred size of print for LWLV, clarity of print becomes a challenge to learners hence face problems in accessing information.

#### 4.2.2 LWLV are Trained to use Low Vision Devices

Teachers responded as follows when asked to indicate whether LWLV are trained to use low vision devices (Table 4.2.1): 5 (3.4%) of teachers strongly agreed, 4 (2.7%) agreed, 15 (10.2%) were undecided, 50 (34.0%) disagreed while 73 (49.7%) strongly disagreed. These results showed that most of the respondents 123 (83.7%) disagreed with the statement. The (M=1.76) indicated disagreement with the statement. Finding of this study concur with ICEVI (2005), who observed that in Uganda, LWLV were not trained to use low vision magnification devices. Table 4.1.3 shows number of regular primary schools training LWLV on use of low vision devices in Vihiga County, Kenya.

**Table 4.2.3: Training on Use of Low Vision Devices (n=22)**

Low Vision Devices	Teaching on the Use	
	Yes	No
	f (%)	f (%)
1. Adapted output systems	4 (18.2)	18 (81.8)
2. Large sized exercise books	10 (45.5)	12 (54.5)
3. Concrete materials	22 (100.0)	0 (0.0)
4. Lenses	9 (40.9)	13 (59.1)
5. Magnifiers	0 (0.0)	22 (100.0)
6. Reading and writing stand	1 (4.5)	21 (95.5)

n – Number of schools

f – Frequency

% - Percentage

Results from table 4.2.3 indicated that apart from concrete materials, training on the use of low vision devices was below 50%: adapted output systems 4 (18.2%), large sized exercise

books 10 (45.5%), concrete materials 22 (100.0%), lenses 9 (40.9%), magnifiers 0 (0.0%) and reading and writing stand 1 (4.5%).

When asked whether teachers train/trained them to use low vision devices, one learner in school said, “At no time has a teacher taught me how to use my spectacles.” While a Drop-out LWLV said, “A teacher taught the class how to ignite fire using my hand-held lens in a science lesson.” When asked for the challenges that they faced while training LWLV to use low vision devices, teachers’ responses were as follows: “I know very little about low vision devices.” “Low vision is tough.” “Training LWLV to use low vision devices is being affected by lack of low vision devices”.

Findings of this study concur with those of Yalo et al.. (2010), who observed that teachers must be in a position to help learners to incorporate the use of low vision devices into everyday learning and leisure activities by selecting low vision devices that are portable and therefore readily available when learners need them. However teachers constantly face the challenges of not understanding properties of lenses and how the lenses affect visual functioning. It is also important for teachers to work with learners to overcome psychological obstacles when using low vision devices. It is also critical for the teachers to encourage learners to use their low vision devices throughout the day to perform various tasks in various settings so that the learners can get used to low vision devices as aids to near normal visual functioning. Encouraging learners to use devices can be realized if teachers get trained to understand subtle challenges that learners experience when performing visual tasks using low vision devices. It therefore implies that teachers get frustrated whenever they fail to properly guide learners to use low vision devices. Any teacher facing such challenges will always fail

to communicate curriculum content adequately and therefore fail to lead learners under their care to learn new skills required for academic and social advancement.

Teachers faced challenges of training learners to use low vision devices because learners break or lose the devices frequently. This fact poses major challenges to both teachers and learners because lack of low vision devices leads to low expectations from learners leading to drop-out of LWLV. Learners have been noted to come up with flimsy excuses of not having the devices. It behoves any teacher working with LWLV to come up with strategies of keeping low vision devices safely (Yalo et al..., 2010 & Bachofer, 2007).

#### **4.2.3 Multisensory Strategy is used in getting Learners Experiences**

When teachers were asked to indicate whether data on multisensory strategy is used in getting learners experiences (Table 4.2.1), they responded as follows: 75 (51.0%) of teachers strongly agreed, 59 (40.1%) agreed, 5 (3.4%) were undecided, 6 (4.1%) disagreed while 2 (1.4%) strongly disagreed. Results pointed out that most of the respondents 134 (91.1%) agreed with the statement. The (M=4.35) indicated agreement with the statement. Finding of this study concur with UNESCO (2005) which observed that the teacher should change task requirements so that learners can listen rather than read, or give answers orally rather than write.

Teachers' responses to how they adapt instructions to meet the learning needs for LWLV were as follows, "Chalkboard" "demonstration" "modelling" "field trips" Findings of this study concur with those of ESHV (2011), who pointed out that due to their visual impairment, many learners will need to develop skills not necessarily required by their fully sighted peers. For appropriate remediation to be provided, again the peripatetic support

teacher should be consulted at all times. Such specialised skills include emphasis being placed on listening skills, visual-motor and visual perceptual skills, (ensuring the child makes the most effective use of the vision he possesses by concentrating on activities such as matching, discriminating, hand-eye co-ordination, tracking, scanning, copying, fine and gross motor activities etc), and independence and self-help skills.

#### **4.2.4 LWLV are given Breaks between and within Activities**

Teachers responded as follows when asked to indicate whether LWLV were given breaks between and within activities (Table 4.2.1): 12 (8.2 %) of teachers strongly agreed, 38 (25.9%) agreed, 2 (1.4%) were undecided, 45 (30.6%) disagreed while 50 (34.0%) strongly disagreed. According to these results, most of the respondents 95 (64.6%) disagreed with the statement. The (M=2.44) indicated disagreement with the statement. Findings of this study disagree with UNESCO (2005), who observed that the teacher provides structure practice activities to provide learners with enough time to master skills; be flexible with regard to a time-frame and provide special support in particular subjects (e.g. orientation and mobility) over and above the periods allotted for more traditional subjects. It is helpful if teachers limit the number of problems that the learners with visual impairment must solve or the number of paragraphs that they must write.

When asked whether they are/were given breaks within and between lessons, both LWLV in school and Drop-out LWLV said, “No.” Findings of this study are not in line with those of Friend (2008), who recommended the need for breaks in activities and shortened assignments. Without periods of rests between activities, LWLV develop fatigue/lack of interest in the visual task at hand (Yalo et al..., 2010).

#### 4.2.5 Examinations are Adapted for LWLV

When teachers were asked to indicate whether examinations were adapted to meet the educational needs of LWLV (Table 4.2.1), they responded as follows: 8 (5.4%) of teachers strongly agreed, 22 (15.0%) agreed, 6 (4.1%) were undecided, 39 (26.5%) disagreed while 72 (49.0%) strongly disagreed. According to these results, most of the respondents 111 (75.5%) disagreed with the statement. The (M=2.01) indicated disagreement with the statement. Table 4.2.4 shows number of LWLV currently taking cognisance of adapted internal examinations and whether the examinations met their special educational needs.

**Table 4.2.4: Availability and Use of Adapted Internal Examination (n=105)**

Adaptations of Examination	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Adapted internal examinations	6 (5.7)	99 (94.3)	2 (1.9)	103 (98.1)

n – Number of LWLV

f – Frequency

% - Percentage

Results from table 4.2.4 indicated that internal examinations were adapted for 6 (5.7%) of the LWLV in school. Out of these 2 (1.9%) were effectively used to meet the special educational needs for the LWLV in school. Findings of this study concur with Väyrynen (2008), who observed that with regard to exams, a wide range of assessment methods should be developed in order to reflect the diversity of the learners and not to place any learner at a disadvantage due to background, language, or disability. Table 4.2.5 shows number of regular primary schools with adapted national examinations and whether the examinations met the special educational needs of the LWLV.

**Table 4.2.5: Availability and Use of Adapted National Examination (n=22)**

Adaptations of Examination	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Adapted national examinations	15 (68.2)	7 (31.8)	-	-

n – Number of schools

f – Frequency

% - Percentage

Results from table 4.2.5 indicated that 15 (68.2%) regular primary schools had records of modified national examinations for LWLV but it was not clear whether they were effectively used or not due to lack of clear records of LWLV who had sat for the national examinations. Findings of this study concur with Kiarie (2004), who noted that in Kenya, students who are blind are required to take the same examinations as the general population of students with regard to the cognitive skill areas. They are provided with some accommodations and adaptations regarding the time. These students have an additional 30 minutes within which to complete national examinations and discussions are underway to assess the adequacy of that time accommodation and to recommend additional time if necessary. Also underway are plans to improve interactions between examination officers in charge of various test subjects and experts in special needs education to ensure that necessary adaptations are made as appropriate.

#### **4.2.6 There is enough Human Resource to Address the Educational Needs of LWLV**

Teachers responded as follows when asked to indicate whether there was enough human resource to address the educational needs of LWLV (Table 4.2.1): 4 (2.7%) of teachers strongly agreed, 4 (2.7%) agreed, 0 (0.0%) were undecided, 67 (45.6%) disagreed while 72 (49.0%) strongly disagreed. According to these results, most of the respondents 139 (94.6%)

disagreed with the statement. The ( $M=1.65$ ) indicated disagreement with the statement. Findings of this study concur with Maina (2010), Kiarie (2004), & Bluman (2004), who observed that severe shortage of trained general and special educational human resources for students with visual impairment presents obstacles to efficient servicing of the population. Even though Kiarie, 2004 observed that the quality of teacher training and quantity of teachers trained along with plans for accommodating students with visual impairment in national examinations are areas which have witnessed improvement, the finding of this study on the contrary disagrees that there is enough manpower to address the needs of LWLV in regular primary schools and this can lead to drop-out of LWLV. When asked which related professional services they received, most of the head teachers indicated, “Only EARC officers, SNE teacher(s) and regular teachers.” The findings of this study concur with those of MOEST (2003), who observed that only 20% of teachers in special needs educational programmes are trained in SNE. It was further noted that with the exception of graduates from Maseno University, most of these SNE teachers lack the necessary proficiency in handling learners with visual impairment (MOEST, 2003).

#### **4.2.7 LWLV are taught using ECC.**

When teachers were asked to indicate whether LWLV are taught using ECC (Table 4.2.1), they responded as follows: 2 (1.4%) of teachers strongly agreed, 5 (3.4%) agreed, 10 (6.8%) were undecided, 44 (29.9%) disagreed while 86 (58.5%) strongly disagreed. These results showed that only 7 (4.8%) of the respondent agreed with the statement. The ( $M=1.59$ ) indicated disagreement with the statement. When asked whether they are/were taught about their low vision condition, most LWLV in school and Drop-out LWLV indicated, “No” Finding of this study agrees with Kiarie (2004) who observed that most syllabi used in general education classes do not have accommodations in terms of adapted activities for

students with visual impairment. This makes it extremely difficult for students with visual impairment to access the general education curriculum.

#### **4.2.8 Teachers Individualize their Teaching**

Teachers responded as follows when asked to indicate whether they individualized their teaching (Table 4.2.1): 1 (0.7%) of teachers strongly agreed, 4 (2.7%) agreed, 3 (2.0%) were undecided, 60 (40.8%) disagreed while 79 (53.7%) strongly disagreed. These results indicated that only 5 (3.4%) of the respondents agreed with the statement. The (M=1.56) indicated disagreement with the statement. Findings of this study agree with those of ICEVI (2005), who observed that the introduction of free Universal Primary Education in Uganda brought a large increase in the numbers of learners attending school. The huge class sizes raise questions about the quality of education for all learners but they are likely to be even more disadvantageous to learners with visual impairment since they may restrict the opportunities for individual attention.

#### **4.2.9 Correlation between Curriculum Adaptations and Drop-out of LWLV**

When teachers' perspectives on curriculum Adaptations and drop-out of LWLV were correlated the results were as in table 4.2.6.

**Table 4.2.6: Correlation between Curriculum Adaptations and Drop-out of LWLV.**

		Lack of Curriculum Adaptation for LWLV	Drop-out Rate of LWLV
Lack of Curriculum	Pearson Correlation	1	.860(**)
	Sig. (2-tailed)		.000
	N	1176	1176
Adaptation for LWLV	Pearson Correlation	.860(**)	1
	Sig. (2-tailed)	.000	
	N	1176	1176
Drop-out Rate of LWLV	Pearson Correlation	.860(**)	1
	Sig. (2-tailed)	.000	
	N	1176	1176

\*\* Correlation is significant at the 0.01 level (2-tailed).

From table 4.2, the analysis of the correlation matrix indicated that there existed a strong relationship with a statistically significant correlation between lack of curriculum adaptation and drop-out of LWLV. The analysis revealed  $r(1174) = .860, p = .000$ . Since  $r = .860(**)$  (close to .1), this means that changes in lack of curriculum adaptation are correlated with changes in the drop-out of LWLV. Since Pearson's  $r$  is positive (+), this means that as lack of curriculum adaptation increases in value, the drop-out of LWLV also increases in value and as lack of curriculum adaptation decreases in value, the drop-out of LWLV also decreases in value. Finally, since  $p = .000$  ( $p > .05$ ), increases or decreases in lack of curriculum adaptation do significantly relate to increases or decreases in drop-out of LWLV.

Findings of this study agree with those of (Kirk, 2006; AFB, 2013), which observed that if the curriculum is not adapted, many schools for LWLV will have problems in accommodating the LWLV hence lead to drop out of such learners from school. The Final Report of the National Policy on Inclusive Education (Väyrynen, 2008) also pointed that the Basic Education Broad Curriculum does not adequately address the diverse needs of all learners leading to high drop-out cases. A resource distribution analysis undertaken by KIEP indicated a gross under supply of the requisite resources for the education of learners with visual impairment, for instance due to frequent change of curriculum and teaching/learning materials leading to drop-out of LWLV (KSB, 2011).

According to Okange (2011), factors that contributed to drop-out of LWLV from regular primary schools in Homa Bay District included non-existence of specialized facilities/equipment, and lack of specialist teachers which led to absence of adapted and specialist curriculum. The study revealed that 21.7% of the pupils who were initially integrated had either dropped out from the system or transferred to residential special schools.

### **4.3 Teachers Perspectives on Influence of Adaptations made on Physical Environment on drop-out of LWLV**

When teachers were asked to indicate whether they strongly agreed, agreed, were undecided, disagreed or strongly disagreed to statements on adaptations made on physical environment for LWLV in regular primary schools, they responded as in table 4.3.1.

**Table 4.3.1: Teachers Perspectives on Adaptations made on Physical Environment for LWLV (n=147)**

	<b>SA</b>	<b>A</b>	<b>U</b>	<b>D</b>	<b>SD</b>	
<b>Adapted Physical Environment</b>	<b>f (%)</b>	<b>Mean</b>				
The school buildings are accessible to LWLV	39 (26.5)	57 (38.8)	9 (6.1)	24 (16.3)	18 (12.2)	3.51
LWLV are given preferred seating positions in classrooms	42 (28.6)	73 (49.7)	5 (3.4)	18 (12.2)	9 (6.1)	3.82
Glare is controlled in classrooms	2 (1.4)	12 (8.2)	10 (6.8)	56 (38.1)	67 (45.6)	1.82
Classrooms have preferred illumination for LWLV	51 (34.7)	70 (47.6)	13 (8.8)	8 (5.4)	5 (3.4)	4.05
LWLV use special furniture	0 (0.0)	5 (3.4)	6 (4.1)	52 (35.4)	84 (57.1)	1.54
LWLV move safely and efficiently within the school	66 (44.9)	57 (38.8)	12 (8.2)	8 (5.4)	4 (2.7)	4.18
Playing grounds are barrier-free for LWLV	14 (9.5)	27 (18.4)	9 (6.1)	63 (42.9)	34 (23.1)	2.48
LWLV use materials with preferred colours	3 (2.0)	15 (10.2)	8 (5.4)	79 (53.7)	42 (28.6)	2.03

**Key:** SA - Strongly Agree, A - Agree, U - Undecided, D - Disagree, SD - Strongly Disagree, f - Frequency, %- percentage n - Number of respondents **Minimum Score** - 1 point, **Maximum score** - 5 points.

### 4.3.1 The School Buildings are easily Accessible for LWLV

When teachers were asked to indicate whether school buildings were accessible to LWLV (Table 4.3.1), they responded as follows: 39 (26.5%) of teachers strongly agreed, 57 (38.8%) agreed, 9 (6.1%) were undecided, 24 (16.3%) disagreed while 18 (12.2%) strongly disagreed. These results indicated that 96 (65.3%) of the respondents agreed with the statement. The (M=3.51) indicated agreement with the statement. Table 4.3.2 shows the number of regular primary schools with accessible buildings and whether they are used.

**Table 4.3.2: Availability and Use of Accessible School Buildings (n=22)**

Low Vision Devices	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Accessible buildings	14 (63.6)	8 (36.4)	14 (63.6)	8 (36.4)

n – Number of schools

f – Frequency

% - Percentage

Results from table 4.3.2 indicated that 14 (63.6%) primary schools had accessible buildings. Findings of this study concur with that released by EARC Vihiga (2011), which indicated that in response to the recommendation made by MOEST 2003 on piloting inclusive education in selected schools in every district, the EARC selected 24 primary schools in Vihiga County to be prepared to accommodate learners with disabilities. This was among other reasons to ensure that regular primary schools are made accessible to LWLV across the County (EARC, 2012).

### 4.3.2 LWLV are given Preferred Seating Positions in Classrooms

Teachers responded as follows when asked to indicate whether LWLV were given preferred seating positions in classrooms (Table 4.3.1): 42 (28.6%) of teachers strongly agreed, 73 (49.7%) agreed, 5 (3.4%) were undecided, 18 (12.2%) disagreed while 9 (6.1%) strongly disagreed. These results showed that 115 (78.3%) of the respondents agreed with the statement. The (M=3.82) indicated agreement with the statement. Findings of this study concur with MOEST (1995), which observed that teachers of LWLV are encouraged to have a classroom seating arrangement that enables them to sit at an appropriate distance to view materials on the board. The findings also concur with ESHV (2010) which observed that anyone working with LWLV should not discourage or criticise the learner who reads with his head touching or very close to the page. He may not see clearly from a distance and may need to get within 5cm of the page to focus properly. Table 4.3.3 shows the number of regular primary schools with preferential seating position in classrooms and whether they are properly used.

**Table 4.3.3: Availability and Use of Preferential Seating Position (n=22)**

Low Vision Device	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Preferential seating position	20 (90.9)	2 (9.1)	5 (22.7)	17 (77.3)

n – Number of schools      f – Frequency      % - Percentage

Results from table 4.3.3 shows that although 20 (90.9%) regular primary schools used preferential seating position, only 5 (22.7%) were using it effectively. Results from the document analysis guide revealed that out of the LWLV currently in school, 34 (32.4%) were myopic, 46 (43.8%) were hypermetropic while 39 (37.1%) were photophobic. When asked

where they sat LWLV in class, 117 (79.6%) teachers said, “front sits”. This indicated that some of the LWLV that were sat in front of classes were hypermetropic who needed to be sat behind the classroom while those who were photophobic needed to be sat away from direct source of light. Contrary to these results, Friends (2008) observed that learners with myopia should be sat near the chalk board, learners with hypermetropia are to be sat a distance from the chalkboard while learners with photophobic eyes are to be sat away from direct source of light (Friends 2008).

### 4.3.3 Glare is Controlled in Classrooms

When teachers were asked to indicate whether glare is controlled in classrooms (Table 4.3.1), they responded as follows: 2 (1.4%) of teachers strongly agreed, 12 (8.2%) agreed, 10 (6.8%) were undecided, 56 (38.1%) disagreed while 67 (45.6%) strongly disagreed. These results indicated that only 14 (9.6%) of the respondents agreed with the statement. The (M=1.82) indicated disagreement with the statement. Finding of this study disagrees with MOEST (1995), who observed that teachers of learners with visual impairment are encouraged to control glare, too much or too little lighting directed at LWLV. Table 4.3.4 shows the number of regular primary schools with blinders on windows and whether they are properly used.

**Table 4.3.4: Availability and Use of Blinders on the Windows (n=22)**

Low Vision Device	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Window blinds	1 (4.5)	21 (95.5)	1 (100.0)	0 (0.0)

n – Number of schools

f – Frequency

% - Percentage

Results from table 4.3.4 indicated that only 1 (4.5%) of schools had blinds in class windows. The results further showed that the school was effectively using the blinders to control glare. Finding of this study is not in line with ESHV (2010), recommendations which stipulated that it is important to be aware of the disabling glare elicited by some highly polished surfaces or even play grounds with a light reflective surface. Generally, it is better to avoid glare, including reflected glare whenever possible. Shiny paper can also be a problem and Matt surfaces are better in this respect. It may be necessary to give consideration to the benefits of blinders in windows if this is possible (ESHV, 2010).

#### 4.3.4 Classrooms have Preferred Illumination for LWLV

Teachers responded as follows when asked to indicate whether classrooms have preferred illumination for LWLV (Table 4.3.1): 51 (34.7%) of teachers strongly agreed, 70 (47.6%) agreed, 13 (8.8%) were undecided, 8 (5.4%) disagreed while 5 (3.4%) strongly disagreed. These results indicated that 111 (82.3%) of the respondents agreed with the statement. The (M=4.05) indicated agreement with the statement. Findings of this study are not in line with Tanya (2010), recommendations that learning environments should be well lit for proper implementation of the ECC. Table 4.3.5 shows the number of regular primary schools with preferred illumination and whether they are properly used.

**Table 4.3.5: Availability and Use of Preferred Illumination (n=22)**

Low vision Device	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
11. Preferred illumination	16 (72.7)	6 (27.3)	7 (31.8)	15 (68.2)

n – Number of schools

f – Frequency

% - Percentage

On the contrary, although results from table 4.3.5 indicated that 16 (72.7%) of regular primary schools had preferred illumination, only 7 (31.8%) of the primary schools used the preferred illumination effectively. Finding of this study agrees with Barraga (2006), who said that areas surrounding LWLV need to have diffused illumination. However, higher amounts of illumination are usually preferred by learners who have visual conditions such as optic atrophy and retinitis pigmentosa. The teacher should understand that learners with albinism and aniridia require reduced amount of illumination (Deremeik, Broman, Friedman, West, Massof, Park, Bandeea-Roche, Frick, & Munoz, 2007). This means that the illumination provided for each LWLV should take into consideration of the nature and extent of his/her low vision condition.

#### 4.3.5 LWLV use Special Furniture

When teachers were asked to indicate whether LWLV use special furniture (Table 4.3.1), they responded as follows: 0 (0.0%) of teachers strongly agreed, 5 (3.4%) agreed, 6 (4.1%) were undecided, 52 (35.4%) disagreed while 84 (57.1%) strongly disagreed. These results indicated that 5 (3.4%) of the respondents agreed with the statement. The (M=1.54) indicated disagreement with the statement. Table 4.3.6 shows the number of primary schools with modified furniture for LWLV and whether they are properly used.

**Table 4.3.6: Availability and Use of Modified Furniture (n=22)**

Low vision Device	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Modified on furniture	0 (0.0)	22 (100.0)	N/A	N/A

n – Number of schools

f – Frequency

% - Percentage

From table 4.3.6, results on availability and use of special furniture indicates that there was no special furniture 0 (0.0%) in any of the schools. Findings of this study are not in line with those of ESHV (2010), which recommended that besides considering distance of an angle in relation to viewing a target across the classroom, many learners will also need to hold reading material close to their faces and should be provided with an adjustable desk top. This is a facility that puts reading material closer to the eyes without necessarily bending over for long periods. This should encourage good posture, enhancement of concentration and make visually demanding tasks less tiring.

#### 4.3.6 LWLV Move Safely and Efficiently within the School.

Teachers responded as follows when asked to indicate whether classroom arrangements hinder free movement of LWLV (Table 4.3.1): 66 (44.9%) of teachers strongly agreed, 57 (38.8%) agreed, 12 (8.2%) were undecided, 8 (5.4%) disagreed while 4 (2.7%) strongly disagreed. Results pointed out that most of the respondents 123 (83.7%) agreed with the statement. The (M=4.18) indicated agreement with the statement. Table 4.3.7 shows the number of regular primary schools with classroom arrangement and whether they are properly used.

**Table 4.3.7: Availability and Use of Classroom Arrangement (n=22)**

Low Vision Device	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Classroom arrangement	0 (0.0)	22 (100.0)	N/A	N/A

n – Number of schools

f – Frequency

% - Percentage

From table 4.3.7, results on availability and use of proper classroom arrangement indicated that no school had proper classroom arrangement to meet the special educational needs of LWLV.

When teachers were asked which challenges they faced when sitting learners with low vision in classroom, these were their responses: “Large number of pupils per class.” “Small sized classrooms.” Findings of this study disagree with Friends (2008) & Bluman (2004) who observed that orientation is being aware of where you are, where you are going and the route to get there. Mobility is moving from place to place. A child has to put orientation and mobility together to travel independently. Orientation and mobility training include sensory training, concept development and motor development. Visual impairment restricts one from safe and efficient travel in an environment thus limiting the person’s opportunities for experiences and also affects social relationships (Friend, 2008). Bluman (2004), lists orientation and mobility tips as eliminate unnecessary obstacles: inform student of changes in room arrangement or of any temporary obstacles and keeping doors and windows completely closed or completely open to eliminate the possibility of the student’s running into a partially open door. Furthermore the findings of this study disagree with those of Tanya (2010), who observed that in the context of Namibia, environmental adaptations present challenges due to the large numbers of learners in each class, placing a limit on the space available.

#### **4.3.7 Playing Grounds are Barrier-free to LWLV**

When teachers were asked to indicate whether playing grounds are friendly to LWLV (Table 4.3.1), they responded as follows: 14 (9.5%) of teachers strongly agreed, 27 (18.4%) agreed, 9 (6.1%) were undecided, 63 (42.9%) disagreed while 34 (23.1%) strongly disagreed. According to these results, most of the respondents 97 (66.0%) disagreed with the statement.

The (M=2.48) indicated disagreement with the statement. Table 4.3.8 shows the number of regular primary schools with barrier-free playing grounds and whether they are appropriately used.

**Table 4.3.8: Availability and Use of Barrier Free Playground (n=22)**

Low Vision Device	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Accommodative playground	8 (36.4)	14 (63.6)	8 (36.4)	14 (63.6)

n – Number of schools      f – Frequency      % - Percentage

Findings from table 4.3.8 indicated that only 8 (36.4%) schools, had accommodative playing grounds and all of them 8 (36.4%) were being used. When asked whether the playing ground is/was friendly, some LWLV in school and Drop-out LWLV said, “Playing ground has pot holes.” “Playing ground is stony.” Findings of this study agree with EARC (2010), which said that most of the schools in Vihiga County lack enough space as fields for playing. The schools with playing fields have not adapted them to meet the needs of learners with special needs. Most of the fields are bumpy and stony which put learners at risk of getting hurt.

#### **4.3.8 LWLV use Materials with Preferred Colours**

Teachers responded as follows when asked to indicate whether LWLV use materials with preferred colours (Table 4.3.1): 3 (2.0%) of teachers strongly agreed, 15 (10.2%) agreed, 8 (5.4%) were undecided, 79 (53.7%) disagreed while 42 (28.6%) strongly disagreed. These results indicated that 121 (82.3%) of the respondents agreed with the statement. The (M=2.03) indicated disagreement with the statement. Findings of this study disagree with

MOEST (1995), which stipulated that teachers of LWLV are encouraged to use contrasting colours to help low vision students to identify features. Table 4.3.9 shows the number of regular primary schools with preferential colours and whether they are appropriately used.

**Table 4.3.9: Availability and Use of Preferential Colours (n=22)**

Low Vision Device	Availability		Use	
	Yes	No	Yes	No
	f (%)	f (%)	f (%)	f (%)
Preferential colors	18 (81.8)	4 (18.2)	2 (9.1)	22 (90.9)

n – Number of schools

f – Frequency

% - Percentage

From table 4.3.9, results indicated that although most of the schools 18 (81.8%) used coloured materials such as chalk and charts, only 2 (9.1)% of the schools were effectively using the coloured materials in addressing the specific needs of LWLV. Findings of this study disagree with ESHV (2010), which says for those learners with useful residual vision, a dark felt tip pen on white or yellow paper should provide the necessary level of contrast, moving if possible at a later date to using a dark soft lead pencil. The older child should be able to make his own decision regarding paper preference, but the younger child may be helped by using bold lined or squared paper.

### 4.3.9 Correlation between Adaptations made on Physical Environment and Drop-out of LWLV

When teachers' perspectives on adaptations made on physical environment and drop-out of LWLV were correlated the results were as in table 4.3.1.0.

**Table 4.3.1.0: Correlation between Adaptations made on Physical Environment and Drop-out of LWLV.**

		Lack of Adaptations made on Physical Environment for LWLV		Drop-out Rate of LWLV
Lack of Adaptations	Pearson Correlation	1		.984(**)
on made Physical	Sig. (2-tailed)			.000
Environment for	N	1176		1176
LWLV				
Drop-out Rate of	Pearson Correlation	.984(**)		1
LWLV	Sig. (2-tailed)	.000		
	N	1176		1176

\*\* Correlation is significant at the 0.01 level (2-tailed).

From table 4.3.1.0, the analysis of the correlation matrix indicates that there exists a strong relationship with a statistically significant correlation between lack of adaptations made on physical environment and drop-out of LWLV. The analysis revealed  $r(1174) = .984, p = .000$ . Since  $r = .984(**)$  (close to 1), this means that changes in lack of adaptations made on physical environment are correlated with changes in the drop-out of LWLV. Since Pearson's  $r$  is positive (+), this means that as lack of adaptations made on physical environment increases in value, the drop-out of LWLV also increases in value and as lack of adaptations

on physical environment decreases in value, the drop-out of LWLV also decreases in value. Finally, since  $p = .000$  ( $p < .05$ ), increases or decreases in lack of adaptations on physical environment do significantly relate to increases or decreases in drop-out of LWLV.

Findings of this study agree with KSB (2011), which observed that according to a survey carried out by KESSP in 2005, 75% of head teachers in Kenya identified an unfriendly environment as a major cause for their refusal to admit and promote LWLV in their schools. In Uganda, up to 85% of school environment is inaccessible to learners with visual impairment and an impediment to the realization of quality education since most of the LWLV end up dropping out of school (ICEVI, 2005).

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary

A summary of the study's findings was presented based on the stated objectives as follows;

##### 5.1.1 Teachers' Perspectives on Drop-out of LWLV in Regular Primary Schools

This study found teachers' perspectives on drop-out of LWLV in Vihiga County to be as follows: LWLV drop-out of regular primary schools in Vihiga County due to; poor performance (M=4.04), repeating of classes (M=3.89), lack of adapted learning (M=3.72), inadequate teaching staff (M=3.47). The following do not make LWLV to drop-out of regular primary schools in Vihiga County; lack of individual attention (M=2.63), lack of funds (M=2.49), inaccessibility of schools (M=1.58) and indiscipline cases of LWLV (M=1.37).

##### 5.1.2 Teachers' Perspectives on influence of Curriculum Adaptations on Drop-out of LWLV in Regular Primary Schools

This study found teachers' perspectives on influence of curriculum adaptations on drop-out of LWLV in Vihiga County to be as follows: The only area of curriculum adapted for LWLV in Vihiga County was use of multisensory strategy in getting learners' experiences (M=4.35). Apart from this, all the other areas of curriculum were not adapted. These included: teachers individualize their teaching (M=1.56), LWLV are taught about the ECC (M=1.59), there is man power to address the needs of LWLV (1.65), LWLV are trained on use low vision devices (M=1.76), LWLV have low vision devices (M=1.81), examinations are modified to meet the needs of LWLV (M=2.01), and finally LWLV vision are given breaks between and within activities (M=2.44). When teachers' perspectives on curriculum adaptations were correlated with drop-out of LWLV from Vihiga County, lack of curriculum adaptation was

found to influence drop-out of LWLV. Lack of curriculum adaptation led to an increase in the drop-out of LWLV.

### **5.1.3 Teachers' Perspectives on influence of Adaptations made on Physical Environment on Drop-out of LWLV in Regular Primary Schools**

This study found teachers' perspectives on influence of adaptations made on physical environment on drop-out of LWLV in Vihiga County to be as follows: Areas of physical environment adapted for LWLV in Vihiga County were; LWLV move safely and efficiently within the school (M=4.18), classrooms have preferred illumination for LWLV (M=4.05), LWLV are given preferred seating positions (M=3.82), the school buildings are accessible to LWLV (M=3.51). Apart from these, the other areas of the physical environment were not adapted. These included; LWLV use special furniture (M=1.54), Glare is controlled in classrooms (M=1.82), LWLV use materials with preferred colours (M=2.03) and finally, playing grounds are barrier free for LWLV (M=2.48). When teachers' perspectives on adaptations made on physical environment were correlated with drop-out of LWLV from Vihiga County, lack of adaptations on physical environment was found to influence drop-out of LWLV. Lack of adaptation on physical environment led to an increase in the drop-out of LWLV.

## **5.2 Conclusions**

From the study findings, it is concluded that:

### **5.2.1 Teachers' Perspectives on Drop-out of LWLV from Regular Primary Schools**

LWLV were found to drop out of regular primary schools in Vihiga County due to: poor performance, repeating of classes, lack of adapted learning resources and inadequate teaching staff.

### **5.2.2 Teachers Perspectives on influence of Curriculum Adaptations on Drop-out of LWLV in Regular Primary Schools.**

The curriculum in regular primary schools in Vihiga County was not adapted for LWLV and this led to drop-out of LWLV.

### **5.2.3 Teachers' Perspectives on influence of Adaptations made on Physical Environment on Drop-out of LWLV in Regular Primary Schools**

The physical environment in regular primary schools in Vihiga County was not adapted for LWLV and this led to drop-out of LWLV.

## **5.3. Recommendations**

From the findings of this study, the following recommendations were made:

To prevent drop-out of LWLV, it is recommended that poor performance, repeating of classes, lack of adapted learning resources and inadequate teaching staff should be controlled.

In light of the findings with regard to influence of curriculum adaptations on drop-out of LWLV, this study recommend that curriculum should be adapted to prevent drop-out of LWLV in regular primary schools.

In light of the findings with regard to influence of adaptations made on physical environment on drop-out of LWLV, this study recommend that physical environment should be adapted to prevent drop-out of LWLV in regular primary schools.

#### **5.4 Suggestion for Further Research**

Based on the study's findings, the following are recommended to be further studied;

- i. Role of Teachers in accommodating LWLV in regular primary schools in Vihiga County.
- ii. Influence of learning environment on participation and involvement of LWLV in education in regular primary schools in Vihiga County.

## References

- AFB, (2013a). *What is a Core Curriculum & Expanded core curriculum?* Retrieved on April 4, 2013 at 4pm, from <http://www.afb.org>.>Professional Development> Teachers
- AFB, (2013b). *Accommodations and Modifications at a Glance*. Retrieved on April 20, 2013 at 2pm, from <http://www.familyconnect.org> >.> Education>
- AFB, (2010). *Educational Interventions for Students with Low Vision: U.S.* Retrieved on February 10, 2010 at 7am, from <http://www.afb.org/>
- Ajuwon, P.M., & Oyinlade, A.O. (2008). Educational placement for children who are blind or have low vision in residential and public schools: A national study of parents perspectives. *Journal of Visual Impairment and Blindness*, vol.102(6), 325-339.
- Avramidis, E. & Norwich, B. (2002). Teachers' attitudes towards integration/inclusion: A review of the literature. *European Journal of Special Needs Education*, vol.17(2), 129-147.
- Bachofer C. (2007). Low vision devices and children with visual impairment. *The Educator*. Vol.XX(1), 14-17.
- Barraga N. (2006). *Visual impairment and learning*. Austin: Library of Congress.
- Best, J. & Kahn, T. (2006). *Research methods. Qualitative and quantitative approaches*. Longman publishers: Nairobi, Kenya.
- Bluman, A.G. (2004). *Elementary statistics: A step by step approach*. New York: McGraw-Hill.
- Corn, A., & Erin, J. (Eds.). (2010). *Foundations of low vision: Clinical and functional perspectives*. New York: AFB Press.
- Corn, A. L., & Koenig, A. J. (2002). Literacy for students with low vision: A framework for delivering instruction. *Journal of Visual Impairment and Blindness*, vol.96, 305-321.
- Corn, A. L., Wall, R. S., & Bell, J. (2000). Impact of optical devices on reading rates and expectations for visual functioning of school-age children and youth with low vision. *Visual Impairment Research*, vol.2, 33-41.
- Corn, A. L., Wall, R. S., Joe, R. T., Bell, J. K., Wilcom, K., & Perez, A. (2002). An initial study of reading and comprehension rates for students who received optical devices. *Journal of Visual Impairment and Blindness*, vol.96, 322-334.
- Council for Exceptional Children. (2000). *National plan for training personnel to serve children with blindness and low vision*. Reston, VA: Council for Exceptional Children.
- Friend, M., (2008). *Special education; Contemporary perspectives for school*

- professionals*. USA: Pearson Ltd.
- Deremeik J., Broman A.T., Friedman D., West S.K., Massof R., Park W., Bandeea-Roche, K., Frick K., Munoz B. (2007). Low vision rehabilitation in a nursing home population. *Journal of Visual Impairment and Blindness*, vol.101(11), 701-713.
- EARC Report, Vihiga County, Kenya (2011). *SNE program in Vihiga County, Kenya*.
- Elizabeth, W. (2012). *Why special needs students drop out and what you can do about it*. Retrieved on December 1, 2011 at 3pm, from <http://www2.ed.gov/about/reports/annual/osep/2001/section-i.pdf>
- ESHV (2010), *Visual impairment a guide for teaching assistants*. Retrieved on February 10, 2010, at 5am from <http://www.teachersaideadvice.html.org/>
- Ferrell, K.A. (2005). The effects of NCLB. *Journal of Visual Impairment and Blindness*, vol.99(1), 681-683.
- Friend, M. (2008). *Special education. Contemporary perspectives for school professionals*. USA: Pearson Education, Inc.
- Gachiri, J. (2010, March 11). *State to increase funds for special needs education*. Mediahouse: The Business Daily.
- Gargiulo, R.M. (2006). *Special education in contemporary society*. USA: Thomson Wadsworth.
- George, A.L., & Duquette, C. (2006). The psychosocial experiences of a student with low vision. *Journal of Visual Impairment and Blindness*, vol.100(1) 152-163.
- Griffin, H., Williams, S., & Engleman, M. (2002). Using technology to enhance cures for children with low vision. *Teaching Exceptional Children*, vol.35(2), 36-42.
- Hatlen, P. (2000). *The core curriculum for the blind and visually impaired students including those with additional disabilities*. In A. J., Koenig & M. C., Holbrook, *Foundations of education, Vol.2, Instructional strategies for teaching children and youths with visual impairment*. New York: AFB Press.
- ICEVI, (2005). *An investigation into the educational inclusion of children with a visual impairment in Uganda*. Retrieved on May 10, 2012 at 9am, [www.icevi.org/.../UGANDA%20RESEARCH%20%20FINAL.doc](http://www.icevi.org/.../UGANDA%20RESEARCH%20%20FINAL.doc)
- Kiarie, W.M., (2004). Education of students with visual impairments in Kenya: Trends and issues. *International Journal of Special Education 2004*, vol.19(2), 16-22.
- Kirk, S.A., Gallagher, J.J., Anastasiow, N.J., & Coleman, M.R., (2006). *Educating exceptional children*. USA: Houghton Mifflin Company.
- K.I.S.E, (2002). Distance Learning Programme in SNE (module 18); *Section 1, Kenyan policy, and legal framework on special needs education. Section 2, International policies and conventions of special needs education and their*

- implications*. KISE and UNICEF.
- Koenig, A., & Holbrook, M. C. (2010). *Selection and assessment of learning and literacy media for children and youth with low vision*. In A. Corn & J. Erin, *Foundations of low vision: Clinical and functional perspectives*. New York: AFB Press.
- Koenig, A.J., & Holbrook, M.C. (2000). *Planning instruction in unique skills*. In A.J. Koenig & M.C. Holbrook (Eds.), *Foundations of education: Instructional strategies for teaching children and youths with visual impairments*. New York: America Foundation for the Blind Press.
- KSB, (2009). *Annual report and financials 2009*. Retrieved on April 20, 2013 at 6am, from [www.ksblind.org/annual%20report%2009.pdf](http://www.ksblind.org/annual%20report%2009.pdf) The Trustees of Columbia University in the City of New York 2013
- Lighthouse International. (2010). *Educational interventions for students with low vision*. Retrieved on February 10, 2010 at 5pm, from <http://www.lighthouse.org/>
- Lohmeier, K.L. (2005). Implementing the expanded core curriculum in specialized schools for the blind. *Review*, vol.37, 126-133.
- Lueck, A. H. (2004a). *Functional vision: A practitioner's guide to evaluation and intervention*. New York: AFB Press.
- Lueck, A. H. (2004b). Relating functional vision assessment, intervention, and outcomes for students with low vision. *Visual Impairment Research*, vol.6, 45-52.
- Lueck, A. H., Chen, D., Kekelis, L. S., & Hartmann, E. (2010). *Developmental guidelines for infants with visual impairments: A guidebook for early intervention*. Louisville, KY: American Printing House for the Blind.
- Lueck, A.H., & Heinze, T. (2004). *Interventions for young children with visual impairments and students with visual and multiple impairments*. in A.H. Lueck. *Functional vision: A practitioner's guide to evaluation and intervention*. New York: AFB Press.
- Lussenhop, K., & Corn, A.L. (2002). Comparative studies of the reading performance of students with low vision. *Review*, vol.34(2), 57-69.
- Maina, W. (2010). *Engendering empowerment: education and equality: Expanding access to quality education in Africa by 2015: The case for the girl with visual impairment*. Retrieved on March 24, 2012 at 11pm from <http://www.e4coference.org/wp-content/uploads/.../E-wilfred-maina.pdf>.
- Mason, c., Davidson, R., & McNerney, C. (2000). *National plan for training personnel to serve children with blindness and low vision*. Reston, VA: Council for Exceptional Children.
- Ministry of Human Resource Development India, (2006). *Analytical tables 2006-07 – DISE*. Retrieved on April 21, 2013, at 6am from

- <http://www.dise.in/.Publication%202006./Analytical%20Tables%20>.
- Mittler, P. (2003). *Building bridges between special and mainstream services*. Inclusion: theory and practice. Retrieved on April 4, 2011 at 9am from [http://www.eenet.org.uk/theory\\_practice/build\\_bridges.html](http://www.eenet.org.uk/theory_practice/build_bridges.html).
- MOEST, (2008). *Special needs policy*. Nairobi: Government Printers.
- MOEST, (2007). *Gender policy in education*. Nairobi: Jomo Kenyatta Foundation.
- MOEST, (2003). *Report of the task force on special needs education (Kochung report)*. Nairobi: Jomo Kenyatta Foundation.
- MOEST, (1999). *The commission of enquiry into education systems (Koech report)*. Nairobi: Jomo Kenyatta Foundation.
- MOEST, (1995). *How to handle children with special needs: Guidelines for teachers, parents, and all others*. Jomo Kenyatta Foundation.
- MOEST, (1988). *The presidential working committee on education and training for this decade and beyond (Kamunge report)*. Nairobi: Jomo Kenyatta Foundation.
- MOFAP, (2002). *Food security district profile*. Retrieved on January 10, 2011 at 6pm from [http://www.afb.org/info\\_document\\_view](http://www.afb.org/info_document_view)
- MOPAND, (2005). *Vihiga district strategic plan 2005-2010 for implementation of the national population policy for sustainable development*. National coordination agency for population and development Ministry of Planning and National Development.
- National agenda for children and youths with visual impairments including those with multiple disabilities (2010). *Educational interventions for students with low vision*. Retrieved on Feb 10, 2010 at 8pm from <http://www.afb.org/nationalagenda.asp>
- Okange, C.O. (2011). *Factors affecting administration of integration programme of primary school pupils with VI in Homa bay District, Nyanza*. Retrieved on May 10, 2012 at 1pm from <http://www.etd-library.ku.ac.ke/ir/handle/1234567/1888?show=full>
- Ophir-Cohen, M., Ashkenazy, E., Cohen, A., & Tirosh, E. (2005). Emotional status and development in children who are visually impaired. *Journal of Visual Impairment and Blindness*, vol.99, 478-485.
- Pivic, J., McComas, J., & Laflamme, M. (2002). Barriers and facilitators to inclusive education as reported by students with physical disabilities and their parents. *Exceptional Children* vol.69(1), 97-107.
- Republic of Kenya, (2005). Sessional paper No. 1, 'A policy framework for education, training and research.' Nairobi,: Government printers.
- Republic of Kenya (2003). *Persons with Disability Act (2001)*. Nairobi: Government

Printers.

Republic of Kenya, (2001). *Children's Act (2001)*. Nairobi: Government Printers.

Rukwaro, R.N. (2010). *The education concept of low vision intervention – The Kenyan model*. Retrieved on February 10, 2010 at 11am from [kise@iconnect.co.ke](mailto:kise@iconnect.co.ke)

Sands, D. J., Kozleski, E. B., & French, N. K. (2000). *Inclusive education for the 21<sup>st</sup> century*. Australia: Wadsworth/Thomson Learning.

Sharma, U. (2005). *Integrated education in India: Challenges and prospects*. Retrieved on May 20, 2012 at 1pm from <http://www.dsq-sds.org/article/view/524/701>

Sharma, U., & Desai, I. (2002). Measuring concerns about integrated education in India. *Asia and Pacific Journal on Disability*, vol.5(1), 2-14.

Shreya R. & Chowdhury (2010) *Sarva Shiksha Abhiyan fails blind students*. Retrieved on April 1, 2013 at 5pm from [articles.timesofindia.indiatimes.com](http://articles.timesofindia.indiatimes.com) › Collections

Smith, A., Huebner, K. M., & Leigh, L.E. (2002). *Access to visual learning option for children with low vision: Policy, practice, and cost effectiveness. Paper presented at the international conference of the association for the education and rehabilitation of the blind and visually impaired*. Toronto: Ontario.

Smith, J. & Erin, J. (2002). The effects of practice with prescribed reading glasses on students with low vision. *Journal of Visual Impairment & Blindness*, vol.96, 765-782.

Steve, M., Larry, C., Mani, M., Cathrine, C., Ben, M., Wilfred, M. (2005). *An investigation into the educational inclusion of children with visual impairment in Uganda*. Retrieved on January 7, 2012 at 9pm from <http://www.icevi.uganda.com>

Suka, A. (2006). *Violence against girls who are blind and visually impaired in schools in Malawi*. Retrieved on April 4, 2013 at 10pm from [http://www.wunrn.com/news/2008/08\\_08/.../081108\\_malawai.htm](http://www.wunrn.com/news/2008/08_08/.../081108_malawai.htm)

Tanya, K. (2010). *Including learners with visual impairments in a Namibian mainstream secondary school*. Retrieved on February 14, 2012 at 4pm from [http://scholar.sun.ac.za/bitstream/...1/.../zulch knouwds,%20T.pdf?](http://scholar.sun.ac.za/bitstream/...1/.../zulch%20knouwds,%20T.pdf?)

The inclusive educational process of students with visual impairment in Spain. (2009). An analysis from the perspective of organizations. Retrieved on December 12, 2010 at 11pm from <http://www.faqs.org/periodicals/201009/2141808461.html>.

KSB (2011). *Enrolment of learners with low vision in regular primary schools*. Retrieved on November 25, 2011 at 1pm from <http://www.ksblind.org/Education.html>

Texas school for the blind and Visually Impaired, (2010). *Educational interventions for students with low vision*. Retrieved on February 10, 2010 at 5pm from <http://www.tsbvi.edu/>

- Turnbull, A., Turnbull, R., Wehmeyer, M.L. (2007). *Exceptional lives; Special education in today's Schools*. USA: Pearson education Ltd.
- UN, (2000). *Education for all conference, Dakar Senegal*. Paris: UN.
- UN, (1990). *World conference on education for all, Jomtein; Thailand*. Paris: UN.
- UNICEF, (2003). *Report on education for all*. Paris: UNICEF.
- UNESCO. (2009). *Inclusive education: The way of the future (final report)*. Paris: UNESCO.
- UNESCO, (2005). *Education for all global monitoring report: Making primary education affordable*. Paris: UNESCO.
- UNESCO. (2005). *Guidelines for inclusion: Ensuring access to education for all*. Paris: UNESCO.
- UNESCO, (1994). *World conference on special needs, Salamanca Spain*. Paris: UN.
- U.S Department of Education. (2002). *To assure the free appropriate public education of all children with disabilities: Twenty-third annual report to congress on the implementation of the individuals with disabilities Education Act*. Washington, DC: U.S Department of Education.
- U.S Department of Education. (2001). *Office of special education programs, Data analysis system*. Washington DC: U.S Department of Education.
- U.S AID, (2005). *Living with disabilities in Africa*. Retrieved on December 1, 2010 at 8pm from [http://www.usaid.gov/locations/sub-saharan\\_africa/features/disabilities.html](http://www.usaid.gov/locations/sub-saharan_africa/features/disabilities.html)
- U.S Department of Education. (2002). *Twenty-fourth annual report to congress on the implementation of the individuals with disabilities Education Act*. Washington, DC: U.S Department of Education.
- Väyrynen, S. (2008). *Final report of the national policy on inclusive education*. Windhoek (Electronic document).
- Visual Impairment. Guide, (2010). *A guide to internet resources about visual impairments, for parents and teachers, educational interventions for students with low vision*. Retrieved on February10, 2010 at 8am from <http://www.viguide.com/>
- Waihenya, K. (2000, May 22). *8-4-4 Locks out disabled children*. East African Standard.
- Wambugu, S. (2010, April 4). *ICT opens new vistas for people with disabilities; World gets smaller for them as advances make integration into society easier*. The Sunday Nation.
- Weiner, H. (2003). Effective inclusion: Professional development in the context of the classroom. *Teaching Exceptional Children*, vol.35(6), 12-18.

West, J.E. (2005). An opportunity slipping away? *Journal of Visual Impairment and Blindness*, vol.99, 677-679.

World Health Organization (2005). *Disability, including prevention, management and rehabilitation*. Retrieved on December 1, 2010 at 6pm from <http://www.who.int/nmh/a5817/en/index.html>

Yalo, J.A., Indoshi, F.C. (2010). *Evaluation of reading proficiency of learners with low vision while using low vision devices*. Retrieved on December 1, 2011 at 9pm from <http://www.interestjournals.org/ER>

Yalo, J.A., Indoshi F.C., Agak J.O., Were C.M. (2010). *Challenges and strategies of working with low vision. Implications for teacher training*. Retrieved on December 1, 2011 at 1pm from <http://www.interestjournals.org/ER>

## **APPENDICES**

### **APPENDIX A**

#### **TEACHERS' QUESTIONNAIRE**

I am carrying out a research within Vihiga County on the influence of learning environment on drop-out rate of LWLV in regular primary schools in Vihiga County, Kenya. You are requested to participate in this study through responding to these questions/statements as per the given instructions. Your responses should be in regard to your current working station. Please give the correct response for the questions/statements. The information that you will provide the researcher with will be treated with utmost confidentiality.

In the set of questions below, you are presented with a statement. You are asked to indicate your level of agreement or disagreement with each statement by indicating whether you; Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) or Strongly Disagree (SD). Use a tick (✓) to indicate your response in one of the 5 small boxes in front of every statement. Your responses should be in regard to your current working station.

SA	A	U	D	SD
----	---	---	---	----

**1. Factors Influencing Drop-out of LWLV**

1. LWLV drop-out of school due to poor performance.....

2. LWLV drop-out of school due to inadequate teaching staff.....

3. LWLV are sent out of school due to indiscipline.....

4. Lack of adapted learning resources make LWLV drop-out of school.....

5. LWLV opt to drop-out of school rather than repeat classes.....

6. LWLV drop-out of school due to lack of funds.....

7. LWLV avoid going to school due to its inaccessibility.....

8. LWLV drop-out of school due to lack of individual attention.....

.

**2. Curriculum Adaptations for LWLV**

9. LWLV have low vision devices.....

10. LWLV are trained to use low vision devices.....

SA	A	I	D	SD
----	---	---	---	----

11. Multisensory strategy is used in getting learners experiences.....

12. LWLV are given breaks between and within activities.....

13. Examinations are modified to meet the educational needs of LWLV.....

14. There is enough manpower to address the educational needs of LWLV.....

15. LWLV are taught on expanded core curriculum .....

16. Teachers individualize their teaching.....

**3. Adaptations Made on Physical Environment for LWLV;**

17. The school buildings are accessible to LWLV.....

18. LWLV are given preferred seating positions.....

19. Glare is controlled in classrooms.....

20. Classrooms have preferred illumination for LWLV.....

21. LWLV use special furniture.....

22. LWLV move safely and efficiently within the school...

23. Playing grounds are barrier free to LWLV.....

24. LWLV use materials with preferred colours.....

**Thank you very much for completing and returning this questionnaire.**

**APPENDIX B**

**INTERVIEW SCHEDULES**

**Head Teacher**

1. Which related professional services do you receive?

i. ....

ii. ....

iii. ....

2. Where do learners with low vision get their funding from?

i. ....

ii. ....

iii. ....

**Teacher**

1. What challenges do teachers face while teaching learners with low vision on the use low vision devices?

- i. ....
- ii. ....
- iii. ....

2. How do you adapt instructions to meet the learning needs for learners with low vision?

- i. ....
- ii. ....
- iii. ....

3. Where do you seat learners with low vision in class?

- i. ....
- ii. ....

4. Which challenges do you face when sitting learners with low vision in classroom?

- i. ....
- ii. ....
- iii. ....

5. Where does the school get funds to meet the educational needs of learners with low vision?

- i. ....
- ii. ....
- iii. ....
- iv. ....

6. Why do learners with low vision drop-out of school?

- i. ....
- ii. ....
- iii. ....

**LWLV in School**

1. Do teachers teach you on how to use low vision devices?

i. ....

2. Are you given breaks within and between lessons?

i. ....

3. Are you taught about your low vision condition?

i. ....

4. How do you travel to school and back home?

i. ....

5. Is the playing ground friendly?

i. ....

**Drop-out LWLV**

1. Did teachers teach you on how to use low vision devices?

i. ....

2. Were you given breaks within and between lessons?

i. ....

3. Were you taught about your low vision condition?

i. ....

4. Was the playing ground friendly?

i. ....

5. How did you travel to school and back home?

i. ....

6. What made you drop-out of school?

i. ....

ii. ....

## APPENDIX C

### DOCUMENT ANALYSIS GUIDE (TO BE COMPLETED BY RESEARCHER)

#### a) Class Registers

##### i. Class Sizes

Class	Stream	No. of Pupils

#### b) Admission Registers

##### i. Low Vision Conditions

Low Vision Condition	Number of Pupils (%)
Myopia	
Hypermetropia	
Photophobia	

#### c) Past Examination Papers

##### i. Nature and Use of Examination for LWLV

Nature of Examination	Availability	Use
Adapted National Examination		

##### ii. End Term Mark Lists

	LWLV	Total Score
1.		
2.		

**d) School Teaching Staff Record**

i. Number of Teachers Training/Trained in Special Education.

<b>Course</b>	<b>Training N (%)</b>	<b>Trained N (%)</b>	<b>Total N (%)</b>
Certificate			
Diploma			
Degree			
<b>Total</b>			

**e) School Fees Records of Drop-out LWLV**

i. Fee Balances of Drop-out LWLV

	<b>LWLV</b>	<b>Fees Balance</b>
1.		
2.		

## APPENDIX D

### Check List

Low Vision Devices	Availability		Use	
	Yes	No	Yes	No
1. Presence of ramps				
2. Accommodative playground				
3. Adapted computer hardware				
4. Adapted computer software				
5. Adapted input systems				
6. Adapted output systems				
7. Large print textbooks				
8. Large sized exercise books				
9. Preferential seating position				
10. Modification on furniture				
11. Special lighting				
12. Classroom arrangement				
13. Window curtains				
14. Preferential colors				
15. Concrete materials				
16. Lenses				
17. Magnifiers				
18. Reading and writing stand				
18. Closed-Circuit Television				
19. Resource room				
20. Modified internal examinations				